Baseline Trash Load and Short-Term Trash Load Reduction Plan

Submitted by:

City of Livermore
Water Resources Division
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Livermore, CA 94551

LIVERMORE
CALIFORNIA

In compliance with Provisions C.10.a(i) and C.10.a(ii) of Order R2-2009-0074

February 1, 2012

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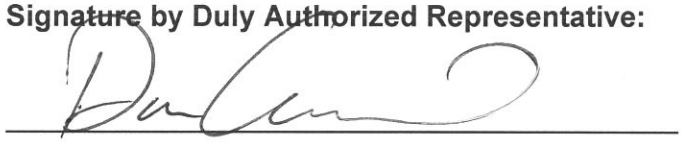
City of Livermore
SHORT-TERM TRASH LOAD REDUCTION PLAN

CERTIFICATION STATEMENT

"I certify, under penalty of law, that this document and all attachments were prepared either under my direction or supervision, or were prepared by our consultants or consultants of the Alameda Countywide Clean Water Program in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted, is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature by Duly Authorized Representative:



Darren Greenwood
Assistant Public Works Director

February 1, 2012

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LIST ATTACHMENTS

ABBREVIATIONS

BASMAA	Bay Area Stormwater Management Agencies Association
BID	Business Improvement District
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CASQA	California Stormwater Quality Association
CDS	Continuous Deflection Separator
CEQA	California Environmental Quality Act
CY	Cubic Yards
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
GIS	Geographic Information System
MRP	Municipal Regional Stormwater NPDES Permit
MS4	Municipal Separate Storm Sewer System
NGO	Non-Governmental Organization
NPDES	National Pollutant Discharge Elimination System
Q	Flow
SFRWQCB	San Francisco Regional Water Quality Control Board
SWRCB	State Water Resource Control Board
TMDL	Total Maximum Daily Load
USEPA	United States Environmental Protection Agency
Water Board	San Francisco Regional Water Quality Control Board
WDR	Waste Discharge Requirements

PREFACE

This Baseline Trash Load and Short-Term Trash Load Reduction Plan (Plan) is submitted in compliance with provision C.10.a(i) and C.10.a(ii)of the Municipal Regional Stormwater NPDES Permit (MRP) for Phase I communities in the San Francisco Bay (Order R2-2009-0074). This Plan was developed using a regionally consistent format developed by the Bay Area Stormwater Management Agencies Association (BASMAA). Based on new information that becomes available during the implementation of this Short-Term Plan (e.g., revisions to baseline loading estimates or load reduction credits of quantification formulas, etc), or if circumstances arise during implementation that were not anticipated at the time of this submission, the City of Livermore may chose to amend or revise this Plan. If revisions or amendments are necessary, a revised Short-Term Plan will be submitted to the Water Board via the City of Livermore's annual reporting process.

1.0 INTRODUCTION

The Municipal Regional Stormwater NPDES Permit for Phase I communities in the San Francisco Bay (Order R2-2009-0074), also known as the Municipal Regional Permit (MRP), became effective on December 1, 2009. The MRP applies to 76 large, medium and small municipalities (cities, towns and counties) and flood control agencies in the San Francisco Bay Region, collectively referred to as Permittees. Provision C.10 of the MRP (Trash Load Reduction) requires Permittees to reduce trash from their Municipal Separate Storm Sewer Systems (MS4s) by 40 percent before July 1, 2014.

Required submittals to the San Francisco Bay Regional Water Quality Control Board (Water Board) by February 1, 2012 under MRP provision C.10.a (Short-Term Trash Loading Reduction Plan) include:

1. (a) Baseline trash load estimate, and (b) description of the methodology used to determine the load level.
2. A description of the Trash Load Reduction Tracking Method that will be used to account for trash load reduction actions and to demonstrate progress and attainment of trash load reduction levels.
3. A **Short-Term Trash Loading Reduction Plan** that describes control measures and best management practices that will be implemented to attain a 40 percent trash load reduction from its MS4 by July 1, 2014;

This Short-Term Trash Load Reduction Plan (Short-Term Plan) is submitted by the City of Livermore in compliance with the portions of MRP provision C.10.a.i listed as 1a and 3 above. In compliance with 1b, BASMAA submitted a progress report on behalf of Permittees that briefly describes the methodologies used to develop trash baseline loads (BASMAA 2011a). These methods are more fully described in BASMAA (2011b, 2011c). Lastly, the *Trash Load Reduction Tracking Method Technical Report* (BASMAA 2011d) was submitted by BASMAA on behalf of Permittees in compliance with submittal 2 described above. The Baseline Loading Rates and Tracking Method projects are briefly described below.

Baseline Trash Generation Rates Project

Through approval of a BASMAA regional project, Permittees agreed to work collaboratively to develop a regionally consistent method to establish baseline trash loads from their MS4s. The project, also known as the *BASMAA Baseline Trash Generation Rates Project* assists Permittees in establishing a baseline to demonstrate progress towards MRP trash load reduction goals (i.e., 40 percent). The intent of the project was to provide a scientifically-sound method for developing (default) baseline trash generation rates that can be adjusted, based on Permittee/site specific conditions; and used to develop baseline loading rates and loads. Baseline loads form the reference point for comparing trash load reductions achieved through control measure implementation.

Baseline trash loading rates are quantified on a volume per unit area basis and based on factors that significantly affect trash generation (e.g., land use, population density, and economic profile). The method used to the establish baseline trash loads for each Permittee builds off "lessons learned" from previous trash loading studies conducted in urban areas (Allison and Chiew 1995; Allison et al. 1998; Armitage et al. 1998; Armitage and Rooseboom 2000; Lippner et al. 2001; Armitage 2003; Kim et al. 2004; County of Los Angeles 2002, 2004a, 2004b;

Armitage 2007). The method is based off a conceptual model developed as an outgrowth of these studies (BASMAA 2011b). Baseline trash loading rates were developed through the quantification and characterization of trash captured in Water Board recognized full-capture treatment devices installed in the San Francisco Bay area. Methods used to develop trash baseline loading rates are more fully described in BASMAA (2011b, 2011c, and 2012).

Trash Load Reduction Tracking Method Summary

The trash load reduction tracking method, described in the *Trash Load Reduction Tracking Method Technical Report,* assists Permittees in demonstrating progress towards reaching trash load reduction goals defined in the MRP (e.g., 40 percent). The tracking method is based on information gained through an extensive literature review and Permittee experiences in implementing stormwater control measures in the San Francisco Bay Area. The literature review was conducted to evaluate quantification methods used by other agencies to assess control measure effectiveness or progress towards quantitative goals. Results are documented in the *Trash Load Reduction Tracking Method: Technical Memorandum # 1 – Literature Review* (BASMAA 2011d).

Methods attributable to specific trash control measures fall into two categories: 1) trash load reduction quantification formulas; and 2) load reduction credits (BASMAA 2011e). Quantification formulas were developed for those trash control measures that were deemed feasible and practical to quantify load reductions at this time. Load reduction credits were developed for all other control measures included in the methodology development. Both categories of methods assume that as new or enhanced trash control measures are implemented by Permittees, a commensurate trash load reduction will occur. Progress towards load reduction goals will be demonstrated through comparisons to established trash baseline load estimates developed through the BASMAA *Baseline Generation Rates Project.*

Short-Term Trash Load Reduction Plan

The purpose of this Short-Term Plan is to describe the current level of implementation of control measures and best management practices, and identify the type and extent to which new or enhanced control measures and best management practices will be implemented to attain a 40 percent trash load reduction from their MS4 by July 1, 2014. The Short-Term Plan was developed using a template created by BASMAA through a regional project. New and enhanced trash control measures (i.e., Best Management Practices) that Permittees may implement to demonstrate trash load reduction goals are included in Table 1.1. This list was developed collaboratively through the BASMAA Trash Committee, which included participation from Permittee, stormwater program, Water Board and non-governmental organization (NGO) staff. The list of control measures is based on: 1) the potential for Permittees to implement; 2) the availability of information required to populate formulas and develop credits; and 3) the expected benefit of implementation. Load reductions associated with each control measure are demonstrated either through a quantification formula (QF) or credits (CR) described in the *Trash Load Reduction Tracking Method Technical Report* (BASMAA 2011e).

In efforts to reduce trash discharged from MS4s, Permittees may choose to implement control measures that are not included in Table 1.1 or described more fully in BASMAA (2011e). If a Permittee chooses to do so, methods specific to calculating trash load reductions for that control measure would need to be developed. Additionally, at that point, consideration should be given to updating this Short-Term Plan.

Additionally, based on new information that becomes available during the implementation of this Short-Term Plan (e.g., revisions to baseline loading estimates or load reduction credits of quantification formulas, etc), or if circumstances arise during implementation of the Plan that were not anticipated at the time of submission, the City of Livermore may amend or revise this Plan. If revisions or amendments are necessary, a revised Short-Term Plan will be submitted to the Water Board via the City of Livermore's annual reporting process.

Table 1.1. Trash control measures for which load reduction quantification credits or formulas were developed to track progress towards trash load reduction goals.

Load Reduction Credits
Single-use Carryout Plastic Bag Ordinances
Polystyrene Foam Food Service Ware Ordinances
Public Education and Outreach Programs
Activities to Reduce Trash from Uncovered Loads
Anti-Littering and Illegal Dumping Enforcement Activities
Quantification Formulas
Full-Capture Treatment Devices
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal)

This Short-Term Plan is organized into the following sections:

- Introduction;
- Trash Baseline Load Estimate;
- Load Reduction Calculation Process
- Planned Implementation of New or Enhanced Control Measures;
- Implementation Schedule; and
- References

2.0 BASELINE TRASH LOADING ESTIMATE

Note: *Tables and information presented in this section are subject to change based on the results of a third monitoring event of the BASMAA Baseline Trash Loading Rates Project. Therefore, this section of the Short-Term Plan may be updated with revised trash generation rates, baseline loading rates, and baseline loads.*

This section provides the estimated annual trash baseline load from the City of Livermore's Municipal Separate Storm Sewer System (MS4). In compliance with Provision C.10.a.ii of the MRP, the City of Livermore worked collaboratively with other MRP Permittees through BASMAA to develop data and the process necessary to establish baseline trash loading estimate from our MS4. The collaborative project was managed through the BASMAA Trash Committee and included a series of steps described in BASMAA (2012) and listed below. The approach was intended to be cost-effective and consistent, but still provide an adequate level of confidence in trash loads from MS4s, while acknowledging that uncertainty in trash loads still exists. The approach entailed the following steps:

1. Conduct literature review;
2. Develop conceptual model;
3. Develop and implement sampling and analysis plan;
4. Test conceptual model;
5. Develop and apply default trash **generation rates** to Permittee effective loading areas;
6. Adjust default trash generation rates based on baseline levels of control measure implementation by the Permittee to develop trash **baseline loading rates**; and,
7. Calculate Permittee-specific annual trash **baseline load**.

Through the collaborative BASMAA project, default baseline trash generation rates (volume per area) were developed for a finite set of categories, based on factors that significantly affect trash loads (e.g., land use). These trash generation rates were then applied to effective loading areas in applicable jurisdictional areas within the City of Livermore. Trash generation rates were then adjusted based on baseline street sweeping, storm drain inlet maintenance, and stormwater pump station maintenance conducted in each applicable area. The sum of the trash loads (i.e., rate multiplied by area) from each effective loading area represents the City of Livermore's baseline trash load from its MS4. A full description of the methods by which trash baseline loads were developed is included in BASMAA (2012a) and is summarized below.

Permittee Characteristics

Incorporated in 1876, the City of Livermore covers 15,731 acres in Alameda County, and has a jurisdictional area of 10,487 acres. According to the 2010 Census, it has a population of 80,968, with a population density of 3,216.5 people per square mile, and average household size of 2.76. Of the 80,968 who call the City of Livermore home, 25.5% are under the age of 18, 7.6% are between 18 and 24, 27.8% are between 25 and 44, 28.8% are between 45 and 65, and 10.3% are 65 or older.

Top employers in the City of Livermore include Form Factor, Mission City Rebar, and Activant. The City is also home to Lawrence Livermore National Laboratory, Sandia National Laboratories, i-GATE, and several wineries. The median household income was $75,322 in 2000[2].

Default Trash Generation Rates (Regional Approach)

A set of default trash generation rates was developed via the BASMAA regional collaborative project (BASMAA 2012a). Default generation rates were developed based on a comparison between trash characterization monitoring results, land uses, economic profiles, and other factors that were believed to possibly affect trash generation. Three trash characterization monitoring events were scheduled via the *Trash Loading Rates Project*. Due to the compliance timeline in the MRP, only two of three trash characterization monitoring events were used to develop trash generation rates described in BASMAA (2012a) and presented in this section. Following the completion of the third characterization event (Winter 2011/12), this section of the Short-Term Plan may be updated to reflect the most up-to-date trash generation and loading rates available. Trash generation rates based on the results of two of the three characterization events are shown in Table 2-1 for each trash loading category.

Table 2-1: Regional Default Annual Trash Generation Rates by Land Use Category.

Land Use Category	Generation Rates (Gallons/Acre)
Retail and Wholesale	29.99
High Density Residential	17.04
K-12 Schools	13.14
Commercial and Services/ Heavy, Light and Other Industrial	7.08
Urban Parks	2.14
Low Density Residential	1.25
Rural Residential	0.17

Jurisdictional and Effective Loading Areas

Default trash baseline generation rates presented in Table 2-1 were applied to effective loading areas with **jurisdictional areas** within the City of Livermore. The City of Livermore's jurisdictional areas includes all urban land areas within the City of Livermore boundaries that are subject to the requirements in the MRP. Land use areas identified by a combination of the ABAG 2005 land use dataset and Permittee knowledge that were not included within the City's jurisdictional areas include:

- Federal and State of California Facilities and Roads (e.g., Interstates, State Highways, Military Bases, Prisons);
- Roads Owned and Maintained by Alameda County;

[2] From the 2000 Census. The median household income for the City of Livermore from the 2010 Census is not currently available.

- Colleges and Universities (Private or Public);
- Non-urban Land Uses (e.g., agriculture, forest, rangeland, open space, wetlands, water);
- Communication or Power Facilities (e.g., PG & E Substations);
- Water and Wastewater Treatment Facilities; and
- Other Transportation Facilities (e.g., airports, railroads, and maritime shipping ports).

Once the City of Livermore's jurisdictional area was delineated, an effective trash loading area was developed by creating a 200-foot buffer around all streets within the City's jurisdictional area. The purpose of the effective loading area is to eliminate land areas not directly contributing trash to the City's MS4 (e.g., large backyards and rooftops). Both the jurisdictional and the effective loading areas for the City of Livermore are presented in Table 2-2.

Table 2-2: Jurisdictional areas and effective loading areas in the City of Livermore by land use classes identified by ABAG (2005).

Land Use Category	Jurisdictional Area (Acres)	Effective Loading Area (Acres)	% of Effective Loading Area
High Density Residential	694	617	7
Low Density Residential	6,556	6,030	68
Rural Residential	1,228	366	4
Commercial and Services/ Heavy, Light and Other Industrial	2,177	1,147	13
Retail and Wholesale	477	329	4
K-12 Schools	310	153	2
Urban Parks	473	275	3
TOTAL	11,915	8,918	**100%**

Permittee-Specific Baseline Trash Loading Rates

Regional default trash generation rates developed through the BASMAA regional collaborative project were applied to effective loading areas within the City of Livermore based on identified land uses. These generation rates were then adjusted based on the calculated effectiveness of baseline street sweeping, storm drain inlet maintenance and pump station maintenance implemented by the City. These adjustments were conducted in GIS due to the site specificity of baseline generation rates and baseline control measure implementation. The following sections describe the baseline level of implementation for these three control measures. A summary of trash baseline generation and loading rates for the City of Livermore are provided in Table 2-3 and areas associated with these rates are illustrated in Figure 2-1.

Baseline Street Sweeping

A "baseline" street sweeping program is defined as the sweeping frequency and parking enforcement implemented by the City of Livermore prior to effective date of the MRP. Baseline street sweeping differs from "enhanced" street sweeping, which includes increased parking enforcement and/or sweeping conducted at a frequency greater than baseline ceiling (i.e., once

per week for retail land uses and twice per month for all other land uses). The baseline ceiling was created to not penalize implementers of enhanced street sweeping programs prior to the effective date of the MRP. For those Permittees that sweep less frequent than the baseline ceiling, their current sweeping frequency serves as their baseline.

The City of Livermore's baseline and current street sweeping program includes sweeping most streets in residential areas once per month, and the downtown area once per week. The baseline street sweeping frequency for industrial and commercial areas is twice per month. The current street sweeping for industrial and commercial areas is once per week for most of the year, and every other week during a four month leaf season.

Parking enforcement signs for street sweeping are not posted in the City. A parking enforcement equivalent does not exist on any streets within the City. The estimated trash load reduced via baseline street sweeping is presented in Table 2-3.

Baseline Storm Drain Inlet Maintenance

Within the City, storm drain inlets were cleaned at a baseline level of one time per year prior to the effective date of the MRP. Based on this baseline frequency and the effectiveness rating developed in BASMAA (2012b), the baseline storm drain maintenance program in the City of Livermore has an annual effectiveness rating of 5%. The estimated trash load reduced via baseline storm drain inlet maintenance is presented in Table 2-3.

Baseline Stormwater Pump Station Maintenance

The City of Livermore owns and maintains four stormwater pump stations, but none of these stations have trash racks that capture trash and allow for removal during maintenance.

Baseline Trash Loading Estimate

The estimated baseline trash load from the City of Livermore was calculated as the sum of the loads from the City's effective loading area, adjusted for baseline implementation of street sweeping, storm drain inlet maintenance, and pump station maintenance. The preliminary annual trash baseline load for the City of Livermore is presented in Table 2-3. Preliminary baseline trash loading rates are presented in Figure 2-1 to provide a geographical illustration of areas with estimated low, moderate, high and very high trash loading rates.

Table 2-3: Preliminary annual trash baseline load for the City of Livermore.

Category	Annual Load (gallons)
Preliminary Generation Trash Load	38,700
Load Removed via Baseline Street Sweeping	10,954
Load Removed via Baseline Storm Drain Inlet Maintenance	1,387
Load Removed via Baseline Stormwater Pump Station Maintenance	0
Preliminary Trash Baseline Load	**26,359**

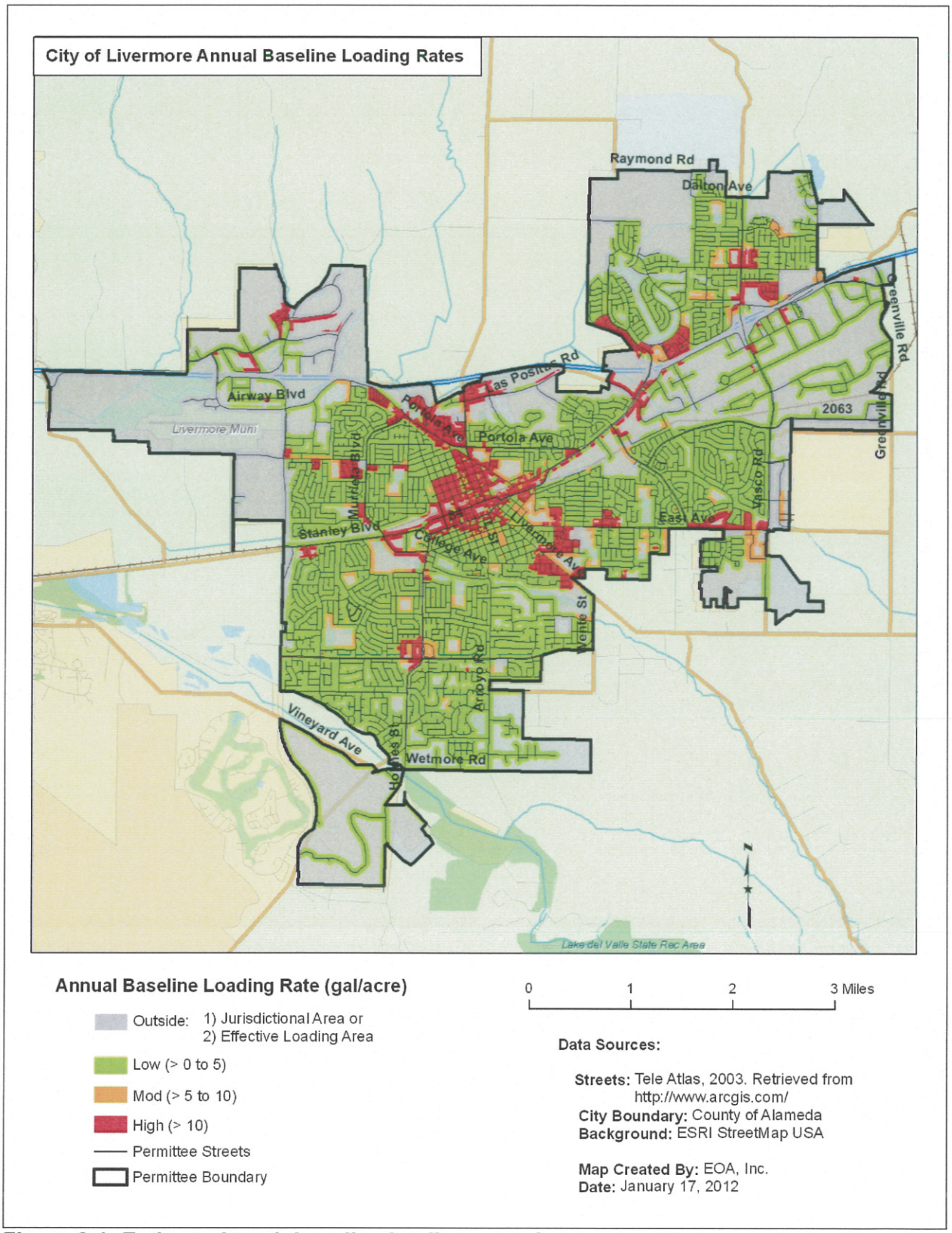

Figure 2-1: Estimated trash baseline loading rates for geographical areas in the City of Livermore

3.0 LOAD REDUCTION CALCULATION PROCESS

Using the guiding principles and assumptions described BASMAA (2011e), a stepwise process for calculating trash load reductions was developed collaboratively through BASMAA. This process is fully described in Trash Load Reduction Tracking Method Technical Report (BASMAA 2011e) and is briefly summarized in this section. The process takes into at what point in the trash generation and transport process a trash control measure: 1) prevents trash generation, 2) intercepts trash in the environment prior to reaching a water body, or 3) removes trash that has reached a water body. In doing so, it avoids double-counting of trash load reductions associated with specific control measures.

To demonstrate trash load reductions, baseline trash loading rates will be adjusted using the following process:

Step #1: Existing Enhanced Street Sweeping

Step#2: Trash Generation Reduction

Step #3: On-land Interception

Step #4: Trash Interception in the Stormwater Conveyance System

Step #5: Trash Interception in Waterways

Step #6: Comparison to Baseline Trash Load

Reductions calculated in Steps 2 and 5 are assumed to be implemented at a constant rate on an "area-wide" basis. For example, if a new region-wide public education strategy is implemented within the San Francisco Bay area, all Permittees can apply load reduction credits associated with this control measure. In contrast, Steps 1, 3 and 4 are "area-specific" reductions that only apply to specific areas within a Permittee's jurisdiction. Area-specific control measures include full-capture treatment devices and enhanced street sweeping. Area-specific reductions may require the use of a Geographic Information System (GIS) to calculate.

Reductions are generally applied in the sequence as presented in Figure 2-1 and described below, although some reductions may be applied "in-parallel" and calculated during the same sub-step in the process.

Step #1: Existing Enhanced Street Sweeping

Trash load reductions due to existing enhanced street sweeping implemented prior to the effective date of the MRP and conducted at levels above baseline levels are not incorporated into each Permittee's trash baseline load. Therefore, load reductions associated with existing enhanced are accounted for first in the trash load reduction calculation process. Existing enhanced street sweeping includes street sweeping conducted at a frequency greater than **1x/week** for streets within retail land use areas or greater than **2x/month** for streets in all other land use areas. The result of adjustments made to trash baseline loads due to the implementation of existing enhanced street sweeping is a set of **current baseline loading rates** and a **current baseline load**.

Step #2: Trash Generation Reduction Control Measures

Trash generation reduction control measures prevent or greatly reduce the likelihood of trash from being deposited onto the urban landscape. They include the following area-wide control measures:

CR-1: Single-Use Carryout Plastic Bag Ordinances

CR-2: Polystyrene Foam Food Service Ware Ordinances

CR-3: Public Education and Outreach Programs

CR-4: Reduction of Trash from Uncovered Loads

CR-5: Anti-Littering and Illegal Dumping Enforcement

CR-6: Improved Trash Bin/Container Management

CR-7: Single-Use Food and Beverage Ware Ordinances

Load reductions associated with trash generation reduction control measures are applied on an area-wide basis.[3] Therefore, reductions in current baseline loading rates are adjusted uniformly based on the implementation of the control measure and the associated credit claimed.

Baseline loading rate adjustments for all generation reduction controls measures implemented may be applied in-parallel, but should be applied prior to calculating on-land interception measures discussed in Step #3. The result of adjustments to trash baseline loading rates due to the implementation of these enhanced control measures will be a set of **street loading rates**. The **street load** is the volume of trash estimated to enter the environment and available for transport to the MS4 if not intercepted via on-land control measures described in Step #2.

Step #3: On-land Interception Control Measures

Once trash enters the environment, it may be intercepted and removed through the following control measures prior to reaching the stormwater conveyance system:

QF-1: On-land Trash Cleanups (Volunteer and/or Municipal) (Area-wide)

QF-2: Enhanced Street Sweeping (Area-specific)

Since on-land trash cleanups can affect the amount of trash available to street sweepers, load reductions associated with their implementation will be quantified first, followed by street sweeping enhancements. On-land trash cleanups will be applied as an area-wide reduction and all effective loading rates will be adjusted equally. Enhanced street sweeping, however, is an area-specific control measure and only those effective loading rates associated with areas receiving enhancements will be adjusted. Due to the spatial nature of enhanced street sweeping, GIS may be needed to conduct this step.

The result of adjustments to effective loading rates due to the implementation of these enhanced control measures will be a set of **conveyance system loading rates**. The **conveyance load** is the volume of trash estimated to enter the stormwater conveyance system (e.g., storm drains).

[3] The only exception to this statement are load reductions associated with the establishment of Business Improvement Districts (BIDs) or equivalent, which are specific to geographic areas and considered "area-specific".

Step #4: Control Measures that Intercept Trash in the MS4

Control measures that intercept trash in the stormwater conveyance system are area-specific. Therefore, they only apply to land areas and associated trash loads reduced. Conveyance system loading rates developed as a result of Step #3 should be adjusted in-parallel for the following control measures:

QF-3a: Partial-capture Treatment Device: Curb Inlet Screens (Area-specific)
QF-3b: Partial-capture Treatment Device: Stormwater Pump Station Trash Racks Enhancements (Area-specific)
QF-4: Enhanced Storm Drain Inlet Maintenance (Area-specific)
QF-5: Full-Capture Treatment Devices (Area-specific)

Load reductions for these control measures are calculated in-parallel because they are applied to independent geographical areas. Reductions from all control measures described in this step are area-specific and may require the use of GIS to calculate a set of **waterway loading rates**. Once waterway loading rates have been determined, a **waterway load** will be developed and used as a starting point for calculating load reductions associated with trash interception in waterways discussed in Step #5.

Step #5: Control Measures that Intercept Trash in Waterways

The load of trash that passes through the stormwater conveyance system without being intercepted may still be removed through interception in waterways. There are two control measures associated with interception in waterways:

QF-3c: Partial-capture Treatment Device: Litter Booms/Curtains (Area-wide)
QF-7: Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal) (Area-wide)

As these control measures are implemented, load reduction estimates can be calculated in-parallel for these two measures.

Step #6: Comparison to Baseline Trash Load

Applying the four steps described in the processes above will provide an estimated trash load (volume) remaining after trash control measures are implemented. As depicted in the following equation, the relative percent difference between the baseline load and the load remaining after control measures are implemented is the percent reduction that will be used to assess progress towards MRP trash load reduction goals.

$$\frac{\text{Baseline Load} - \text{Remaining Load}}{\text{Baseline Load}} = \% \text{ Reduction}$$

4.0 ENHANCED TRASH CONTROL MEASURES

This section describes the new or enhanced trash control measures planned for implementation by the City of Livermore. The enhanced control measures described are designed to reach a 40% reduction by July 1, 2014. New and enhanced control measures that will be implemented by City of Livermore include those listed in Table 4.1.

Table 4.1. Trash control measures that will be implemented by City of Livermore to reach the 40% trash load reduction.

Control Measure
Single-use Carryout Plastic Bag Ordinances
Polystyrene Foam Food Service Ware Ordinances
Public Education and Outreach Programs
Activities to Reduce Trash from Uncovered Loads
Anti-Littering and Illegal Dumping Enforcement Activities
Improved Trash Bin/Container Management (Municipally or Privately-Controlled)
Enhanced Storm Drain Inlet Maintenance
Full-Capture Treatment Devices
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal)

CR-1: Single-use Carryout Plastic Bag Policy

Single-use plastic carryout bags have been found to contribute substantially to the litter stream and to have adverse effects on marine wildlife (United Nations 2009, CIWMB 2007, County of Los Angeles 2007). The prevalence of litter from plastic bags in the urban environment also compromises the efficiency of systems designed to channel storm water runoff. Furthermore, plastic bag litter leads to increased clean-up costs for the Permittees and other public agencies.

Based on recent experiences of municipalities throughout the State, the process Permittees must go through to enact a single-use carryout plastic bag policy/ordinance is difficult due to intense scrutiny and opposition from not only public interest groups and lobbyists, but also merchants and community members. In most cases, most opposition groups are pressing for the development of Environmental Impact Reports (EIRs) in accordance with the California Environmental Quality Act (CEQA).

Baseline Level of Implementation

Prior to adoption of the MRP, Permittees within the Bay area have enacted policies or ordinances on Single-use Carryout Plastic Bags. To avoid penalizing these early implementers, an applicable control measure implemented by a Permittee prior to the effective date of the MRP will be credited equally to a control measure implemented after the effective date. Therefore, the baseline level of implementation is not applicable for this control measure.

Enhanced Level of Implementation

On January 25, 2012, the Alameda County Waste Management Authority (StopWaste.org) adopted a countywide ordinance for all the jurisdictions within Alameda County prohibiting the distribution of single-use carryout plastic bags at the cash register at retail stores covered by the ordinance and establishing mandatory fees for other carryout bags. Jurisdictions may pursue an "opt out" provision from this ordinance. The City of Livermore is not planning to pursue this "opt out" provision. The ordinance will take effect on January 1, 2013 affecting all retail stores that sell packaged food in the City. Single-use plastic carryout bags will be banned on the ordinance's effective date. A minimum fee of 10 cents shall be charged for every paper carryout bag or reusable plastic carryout bag provided to the customer at the cash register. The total percent of trash reduced from MS4s as a result of implementing this single-use carryout bag reduction ordinance will be reported in the Annual Report submitted each September to the Water Board.

Reduction from Implementing Control Measure

The City of Livermore will receive a 10 percent reduction credit for implementing specific enhanced control measures described in Enhanced Level of Implementation section above. The 10 percent reduction credit will be applied to the City of Livermore's baseline trash load. This percent reduction credit is consistent with methods presented in the BASMAA (2011e). A summary of all load reductions anticipated through the implementation of this plan are included in Section 5.0.

CR-2: Polystyrene Foam Food Service Ware Policy

Polystyrene foam is used as food ware in the food service industry. According to the USEPA, floatable debris in waterways, such as products made of polystyrene, is persistent in the environment and has physical properties that can have serious impacts on human health, wildlife, the aquatic environment and the economy (USEPA 2002). Due to its properties, polystyrene foam used as food ware is typically not recycled. Since 1990, over 100 government agencies within the United States, including over twenty within the Bay area have enacted full or partial bans on polystyrene foam food service ware.

Baseline Level of Implementation

Prior to adoption of the MRP, over twenty agencies within the Bay area enacted full or partial bans on polystyrene foam food service ware. To avoid penalizing these early implementers, an applicable control measure implemented by a Permittee prior to the effective date of the MRP will be credited equally to a control measure implemented after the effective date. Therefore, the baseline level of implementation is not applicable for this control measure.

Enhanced Level of Implementation

The City of Livermore adopted an ordinance banning polystyrene foam food service ware at the point-of-sale. The ordinance became effective July 1, 2011. The percent trash reduction from MS4s as a result of implementing a polystyrene foam food service ware ordinance will be reported in the Annual Report submitted each September. The City of Livermore's ordinance banning polystyrene is specified as follows:

Chapter 8.20
DISPOSABLE FOODSERVICE WARE

Sections:

8.20.010 Purpose.

To promote environmental and economic health in the city of Livermore, it is essential that the city take steps to reduce litter and harmful materials from the environment. An immediate and meaningful way to do this is to prohibit the use of expanded polystyrene disposable foodservice ware by food vendors, and to require food vendors to use disposable foodservice ware that is either recyclable or compostable. (Ord. 1919 § 1 (Exh. A), 2010)

8.20.020 Findings.

The city council of the city of Livermore finds that:

A. The city of Livermore has a duty to protect the natural environment and the health of its citizens.

B. Expanded polystyrene litters city storm drains, streets, creeks, parks, and other public places. Expanded polystyrene in the environment may become part of the food chain, resulting in negative impacts to wildlife.

C. Banning expanded polystyrene disposable foodservice ware in the city of Livermore will help address pollution by requiring the use of compostable or recyclable alternatives while helping educate business owners and citizens about the positive impact their packaging choices can make.

D. There is currently no economically feasible means of recycling polystyrene disposable foodservice ware in the city of Livermore.

E. Due to these concerns, a number of California cities have banned expanded polystyrene disposable foodservice ware, and many local businesses and several national corporations have successfully replaced expanded polystyrene disposable foodservice ware.

F. The city's goal is to replace expanded polystyrene disposable foodservice ware with alternative products that are compostable or recyclable. (Ord. 1919 § 1 (Exh. A), 2010)

8.20.030 Definitions.

For the purposes of this chapter, the following definitions shall apply:

A. "ASTM standard" means meeting the standards of the American Society for Testing and Materials (ASTM) International Standards D6400 or D6868 for compostable plastics, as those standards may be amended.

B. "Compostable" means that all materials in the product or package will biodegrade or otherwise become part of usable compost (e.g., soil conditioning material, mulch) in an appropriate composting program or facility. Compostable disposable food service ware includes ASTM standard bio-plastics (plastic-like) products that are clearly labeled.

C. "Disposable foodservice ware" means single-use disposable products used by food vendors for serving or transporting prepared and ready-to-consume food or beverages. This includes but is not limited to plates, cups, bowls, trays and hinged or lidded containers. This definition does not include single-use disposable straws, utensils or cup lids.

D. "Expanded polystyrene" means a thermoplastic petrochemical material utilizing the styrene monomer, marked with recycling symbol No. 6, processed by any number of techniques including, but not limited to, fusion of polymer spheres (expandable bead polystyrene), injection molding, form molding, and extrusion-blow molding (extruded foam polystyrene), sometimes referred to as Styrofoam, a Dow Chemical Company trademarked form of polystyrene foam insulation. In foodservice, expanded polystyrene is generally used to make cups, bowls, plates, trays, and clamshell containers.

E. "Food vendor" means any establishment located within the city of Livermore, or any establishment which provides prepared food or beverages for public consumption within the city of Livermore, including but not limited to any store, supermarket, delicatessen, restaurant, retail food vendor, sales outlet, shop, cafeteria, catering truck or vehicle, sidewalk or other outdoor vendor, or caterer.

F. "Prepared food" means any food or beverage prepared for consumption using any cooking, packaging, or food preparation technique by a food vendor. "Prepared food" does not include uncooked meat, fish, poultry, or eggs unless provided for consumption without further food preparation.

G. "Recyclable" means any material that is accepted by the city of Livermore recycling program, including, but not limited to, paper, glass, metal, cardboard, and plastic. (Ord. 1919 § 1 (Exh. A), 2010)

8.20.040 Standards for compliance.

Except as provided in LMC 8.20.060, Exemptions, all food vendors within the city of Livermore which are currently offering, or which will offer, disposable foodservice ware shall provide disposable foodservice ware that is either recyclable or compostable. (Ord. 1919 § 1 (Exh. A), 2010)

8.20.050 Implementation.

A. The public works director, or his or her designee, shall within six months of effective date of the ordinance codified in this chapter promulgate any rules and regulations necessary or appropriate to achieve compliance with the requirements of this chapter.

B. The rules and regulations promulgated by the public works director, or his or her designee, pursuant to this section shall provide for at least the following:

1. Except as provided in LMC 8.20.060, Exemptions, all food vendors are prohibited from providing prepared food in disposable foodservice ware made from expanded polystyrene. (Ord. 1919 § 1 (Exh. A), 2010)

8.20.060 Exemptions.

A. The environment and energy committee shall have the responsibility to grant waivers or exemptions from the requirements of this chapter.

B. Application for Exemption. If a food vendor can demonstrate undue hardship resulting from compliance with the provisions of this chapter, or that a container required by the food vendor is only available in expanded polystyrene, then the food vendor may apply, in writing, for a one-year exemption from compliance.

C. Meeting with the Environment and Energy Committee. The environment and energy committee will review the application for exemption, and may meet with the applicant to discuss possible ways of meeting the requirements of this chapter.

D. Granting of Exemption. If the environment and energy committee determines that compliance with the provisions of this chapter would cause the food vendor to experience undue hardship, or that a non-expanded-polystyrene version of a necessary container is not available, then the environment and energy committee shall grant the food vendor a one-year exemption. At the end of the one-year exemption, the food

vendor will be required to comply with this chapter or submit another exemption application to be reviewed by the environment and energy committee.

E. Prepackaged Foods. Foods prepackaged outside the limits of the city of Livermore are exempt from the provisions of this chapter, but the purveyors of foods prepackaged outside of the limits of the city of Livermore are encouraged to follow these provisions. This exemption does not apply to food vendors as defined, including caterers which provide prepared food for public consumption within the city of Livermore.

F. Emergency Supplies or Services Procurement. Food vendors shall be exempt from the provisions of this chapter, in a situation deemed by the city council or city manager to be an emergency for the immediate preservation of the public peace, health or safety. (Ord. 1919 § 1 (Exh. A), 2010)

8.20.070 Enforcement and penalties.

A. Written Warning. If a food vendor is found to be in violation of this chapter, the public works director or his or her designee shall issue a written warning to the food vendor.

B. Penalties for Violation. If after issuing a written warning of violation, the food vendor continues to be in violation of this chapter, an authorized enforcement officer, pursuant to LMC Chapter 1.20, Administrative Citations, shall issue citations in the following amount:

1. One hundred dollars for the first administrative citation following a written warning;

2. Two hundred dollars for a second violation within six months of the previous administrative citation;

3. Five hundred dollars for the third and each subsequent violation.

C. Additional Penalties. Additional penalties for administrative costs, late payment changes, compliance reinspections, and collection costs may be assessed pursuant to Chapter 1.20 LMC. (Ord. 1919 § 1 (Exh. A), 2010)

Percent Reduction from Enhancements

The City of Livermore will receive an 8 percent reduction credit for implementing specific enhanced control measures described in *Enhanced Level of Implementation* section above. The 8 percent reduction credit will be applied to the City of Livermore's baseline trash load. This percent reduction credit is consistent with methods presented in the BASMAA (2011e). A summary of all load reductions anticipated through the implementation of this plan are included in Section 5.0.

CR-3: Public Education and Outreach Programs

Permittees in the San Francisco Bay Area have implemented public education and outreach programs to inform residents about stormwater issues relating to pollutants of concern, watershed awareness and pollution prevention. Public education and outreach efforts include developing and distributing brochures and other print media; posting messages on websites and social networking media (Facebook, Twitter etc.), attending community outreach events, and conducting media advertising. In recent years, some municipal agencies have implemented anti-litter campaigns to increase public awareness about the impacts of litter on their communities and water quality; and to encourage the public to stop littering.

Baseline Level of Implementation

The City of Livermore implemented the following public education and outreach control measures prior to the effective date of the MRP. The City of Livermore's Water Resource Division's Environmental Education Program is comprised of three components: (1) Public Outreach Events; (2) School and Public Outreach Presentations, Plant Tours and Sewer Science Labs; and (3) Professional Trainings. An overview of each component is provided below:

- **Public Outreach Events** component requires the Source Control and Water Section staff to perform the following duties: routinely conduct public outreach events at local festivals, street fairs, and creek clean-up events; and submit verbal and written comments to Special Use Permit Applicants regarding proper disposal of food vendor used cooking oil during and after the events, and litter pick-up after the events.

- **School Presentations, Plant Tours and Sewer Science Labs** component requires Source Control, Operations and Laboratory Section staff to perform the following duties: routinely provide tours of the LWRP; and routinely present watershed education, stormwater pollution, wastewater treatment, pollution prevention and water conservation information in both public and private schools.

- **Miscellaneous Outreach** component requires Water Resources Division staff to provide City programs' information to professionals at trainings, workshops and conferences; and Water Resources Division staff to provide general stormwater, sewer pollution prevention messages in the City's community and employee newsletters, and sewer and water bills.

These control measures are considered baseline because they were either not related to trash reduction specifically, or they are not planned to be continued during the term of the MRP. New actions or actions started prior to the effective date of the MRP and continued into the future are described under the next section.

Enhanced Level of Implementation

The City of Livermore will implement the following public education and outreach control measures prior to July 1, 2014.

Litter Reduction Advertising Campaign(s)

BASMAA Youth Outreach Campaign (Regional)

Through participation and funding of the regional **BASMAA Youth Outreach Campaign** the City of Livermore will implement an outreach campaign designed to reduce littering from the target audience in the Bay Area. The Youth Outreach Campaign was launched in September 2011 (post-MRP effective date) and aims to increase the awareness of Bay Area Youth (ages 16-24) on litter and stormwater pollution issues, and eventually change their littering behaviors. Combining the ideas of Community Based Social Marketing with traditional advertising, the Youth Campaign aims to engage youth to enable the peer-to-peer distribution of Campaign messages. The Campaign will at least run from FY 11-12 through FY 13-14. A brief description of the Campaign activities is provided below:

- Raising Awareness: The Campaign will begin by raising awareness of the target audience on litter and stormwater pollution issues. Partnerships with youth commissions, high schools, and other youth focused organizations will be developed to reach the target audience. Messages targeted to youth will be created and distributed via paid advertising, email marketing, Campaign website and social networking sites (e.g,, Facebook and twitter).
- Engage the Youth - The advertisements will encourage the audience to participate in the Youth Campaign by joining a Facebook page, entering a contest, taking an online quiz, etc., and providing their contact information. At the beginning of FY 12-13, a video contest will be launched to get Bay Area youth further involved in the Campaign. An online voting system will be used to select the winning entry. Media advertising will be conducted to promote the winning entry.
- Change Behaviors: To move the audience along the behavior change continuum, the Campaign will use electronic platforms such as email marketing and social networking sites to encourage participants to engage in increasingly more difficult behavior changes, such as participating in a clean-up, organizing a clean-up, etc.
- Maintain Engagement: The Campaign will continue to interact with the target audience through email marketing and social media websites.

The Youth Campaign will include a pre and post campaign survey to evaluate the effectiveness of outreach. The pre-campaign survey will be conducted in FY 11-12 and the post campaign survey in FY 13-14. Other evaluation mechanisms, such as website hits, number of youth engaged in the Campaign's social networking website, etc. will also be used to evaluate its effectiveness in increasing awareness and changing behavior.

Advertising campaign(s) (Countywide Program)

Outreach to Alameda County youth may be limited by scope and budget of the BASMAA Regional Youth Campaign. Therefore the Clean Water Program will supplement the Regional Youth Outreach campaign in order to increase the number of participants in Alameda County.

Prior to MRP implementation the City of Livermore included pollution prevention messages such as proper FOG, drug and household hazardous waste disposal, and litter prevention in its Water and Sewer Bill messages. In addition, Water Resources Division staff continues to target 32,000 residents through the City's semi-annual,

Community Newsletter. As part of the Trash Short Term Plan, the City of Livermore will continue this program and will periodically include message to inform the public about litter prevention.

Outreach to School-age Children or Youth

The Countywide Program is currently conducting stormwater pollution prevention and anti-littering outreach to school-age children through contracts with five environmental education organizations. The current contracts expire in 2014. The Program intends to initiate new contracts for outreach to school-age children in 2014. The outreach programs will have an increased focus on anti-littering messages and will be revised to fulfill the required number of events as described in BASMAA (2011e). The City of Livermore plans to implement this control measure through participation in the Countywide Program.

Media Relations

BASMAA Regional Media Relations Project (Regional)

Through participation and funding of the **BASMAA Regional Media Relations Project**, the City of Livermore plans to continue to implement a media relations project partially designed to reduce littering from target audiences in the Bay Area. The goal of the BASMAA Media Relations Project is to generate media coverage that encourages individuals to adopt behavior changes to prevent water pollution, including littering. At least two press releases or PSAs focus on litter issues each year (e.g., creek clean-up activities, preventing litter by using reusable containers, etc.).

Media Relations (Countywide Program)

Clean Water Program has already developed a media and community relations plan and contact list. The Program will regularly release articles and information to the appropriate publications, blogs and community publications on litter issues. Articles will be timed with regular events, such as Coastal Cleanup in September and the beginning of the rainy season, as well as other current events, if applicable. The media and community outreach list contains many smaller publications and online sites as well as larger newspapers, which will increase the chances the articles are published and read. This effort goes beyond the scope of the Regional Media Relations plan by going deeper into the community through highly localized media channels.

Community Outreach Events

The City of Livermore in collaboration with Zone 7, Livermore Area Parks and Recreation District, Alameda County Conservation District, and Friends of the Arroyo,is currently in the process of developing an "Adopt a Creek . Additionally, this group is also working with teachers from Christenson Middle School and Granada High School to develop specific classroom curriculum to supplement this program. Through the Adopt a Creek Program, Livermore residents and businesses are invited to adopt a creek spot along the Arroyo Seco, Mocho or Las Positas through the Livermore Adopt a Creek Spot Program. Adopting a creek spot allows residents to help improve water quality and aquatic habitat in neighborhood creeks. The removal of trash and litter helps improve the aesthetic beauty of our neighborhoods, while assisting the City in meeting State permit requirements to reduce trash loads from the municipal storm sewer system. Adopt a

Creek Spot is easy and a great way to get involved to help improve our local environment and community.

The Countywide Program will develop a "Litter Outreach" kit for community events. Going beyond the usual table with literature, the kit will include such interactive activities as pledge posters to foster commitment to behavior change, and directly relevant promotional items such as reusable bags. This kit will be provided to all Program member agencies for use at their local events. The City of Livermore will incorporate the use of this Litter Outreach kit at its annual public outreach events as appropriate.

The City of Livermore plans to incorporate "Litter Outreach at the following annual public outreach events:

- Livermore Valley Joint Unified School District's Science Odyssey
- Granada Native Garden Event Cleanup (Earth Day)
- Livermore Wine Festival
- City of Livermore Health and Safety Fair
- Alameda County Fair
- Livermore Coastal Clean-up Day: September 2012 will focus on litter and serve as the "kickoff" event for Livermore's Adopt a Creek Program

The events listed up represent the outreach event planned for the 2012 fiscal year. These events represent the typical types of events the City of Livermore routinely participates. It should be noted that the specific events may change from year to year; however, Livermore will participate in a minimum of four such events on an annual basis and incorporate the "Litter Outreach" message.

Percent Reduction from Enhancements

The City of Livermore will receive a total of 8 percent reduction credit for implementing specific enhanced control measures described in *Enhanced Level of Implementation* section above. This percent reduction is comprised of the following credits, consistent with the *Load Reduction Tracking Method*:

- Litter Reduction Advertising Campaigns – 3%
- Outreach to School-age Children or Youth – 2%
- Media Relations – 1%
- Community Outreach Events - 2%

These 8 percent reduction credits will be applied against the City of Livermore's baseline trash load. This percent reduction credit is consistent with methods presented in the BASMAA (2011e). A summary of all load reductions anticipated through the implementation of this plan are included in Section 5.0.

CR-4: Reduction of Trash from Uncovered Loads

Although it is currently illegal to operate a vehicle that is improperly covered and which its' contents escapes[4], vehicles remain an important trash source to MS4s and local waterways. Specifically, vehicles that do not secure or cover their loads when transporting trash and debris have a high risk of contributing trash to MS4s. Land areas that generate trash from vehicles include roads, highways (on/off ramps, shoulders or median strips) and parking lots. To help address the dispersion of trash from unsecured or uncovered vehicles destined for landfills and transfer stations, Permittees may require municipally-contracted trash haulers to cover or secure loads or work with municipal or private landfill and transfer station operators to educate waste haulers on securing loads and/or to enhance enforcement of existing regulations.

Baseline Level of Implementation

The baseline trash load described in Section 2.0, assumes that prior to adoption of the MRP the City of Livermore has not adopted control measures to reduce trash from vehicles with uncovered loads. Therefore, implementation of any of the control measures described in this section is considered to be enhanced implementation.

Enhanced Level of Implementation

The City of Livermore ***has implemented*** the following enhanced control measures to reduce trash from vehicles with uncovered loads. The City of Livermore has a franchise agreement with Livermore Sanitary to provide waste hauling services within the City. The following specific language to address litter is contained in this agreement as follows:

Contract Section : <u>5.14.2 Litter Abatement</u>

A. Minimization of Spills. Contractor shall use due care to prevent Solid Waste, Recyclable Materials, and Compostable Materials from being spilled, scattered, windblown during the Collection, Transportation, Processing, or other materialhandling activity. If any Solid Waste, Recyclable Materials, or Compostable Materials are spilled during Collection, Transportation, Processing, or other material handling activity, the Contractor shall promptly clean up all
Unacceptable Spillage. This clean-up requirement shall apply to cleaning up drift (e.g., windblown materials) along roads near the facilities used by the Contractor resulting from Contractor's Transport, Transfer, or other material handling activities. Contractor shall not transfer loads from one vehicle to another on any public street, unless it is necessary to do so because of mechanical failure; hot load (combustion of material in the truck); accidental damage to a vehicle or unlessapproved by the City.

B. Cleanup. During Collection, the Contractor shall clean up Litter (whether or notContractor has caused the Litter) and Unacceptable Spills in the immediate vicinity of any Solid Waste, Recyclable Materials or Compostable Materials storage area (including the areas where Collection Bins, Drop Boxes are, and Compactors delivered for

[4] In accordance with the California Vehicle Code Sections 23114 and 23115, it is against the law to operate a vehicle on the highway which is improperly covered, constructed, or loaded so that any part of its contents or loads spills, drops, leaks, blows, or otherwise escapes from the vehicle. Exempted materials include hay and straw, clear water and feathers from live birds. Additionally, any vehicle transporting garbage, trash, or rubbish, used cans or bottles, waste papers, waste cardboard, etc. must have the load covered to prevent any part of the load from spilling on the highway (CVC 2011). Significant fines are possible for non-compliance.

Collection). Each Collection vehicle shall carry a broom and shovel at all times for the purpose of cleanup of Litter and Unacceptable Spills. Cat-litter or similar absorbent material shall be used for liquid spill cleanups. The Contractor shall discuss instances of repeated spillage not caused by it directly with the Generator responsible and will report such instances to City. In situations where the Contractor has already attempted to do so without success, the City will attempt to rectify such situations with the Generator.
C. Covering of Loads. Contractor shall cover all open Drop Boxes at pick-up
2482 location prior to Transport to the Disposal Site or Processing Site.

Additionally, the City of Livermore has formerly adopted specific ordinance language in its municipal code which covers the transportation of trash or debris without a cover, prohibitions against littering, enforcement and recovery for abating litter nuisances, and enforcement via citations and fines. The specific municipal code is detailed below:

Article VII. Litter

8.08.500 Depositing litter prohibited.
It is unlawful for any person to generate litter or to throw, discard, place or deposit solid waste, recyclable materials, or compostable materials in any manner or any amount on any public or private property within the city, except in approved containers or in lawfully established dumping grounds. (Ord. 1816 § 2, 2007)

8.08.510 Throwing litter from a vehicle prohibited.
It is unlawful for any person, whether driver or passenger, in a vehicle to throw or deposit litter in any manner or amount upon any street or other public or private property within the city. (Ord. 1816 § 2, 2007)

8.08.520 Sweeping litter into streets prohibited.
It is unlawful for any person to sweep into or deposit in any gutter, street or other public place within the city the accumulation of litter from any building or lot. Persons owning or occupying property shall keep the sidewalk in front of their premises free of litter. (See LMC 13.45.070.) (Ord. 1816 § 2, 2007)

8.08.530 Depositing household or commercial waste in public litter receptacles prohibited.
No person shall deposit or cause to be deposited in a public litter can any solid waste or other material which may be generated from a personal household or a business. (Ord. 1816 § 2, 2007)

8.08.540 Depositing solid waste in city facility solid waste containers.
No person shall deposit or cause to be deposited on a city property or in any city solid waste receptacle or debris box any solid waste or other material which may be generated from a personal household or a business. (Ord. 1816 § 2, 2007)

8.08.550 Depositing solid waste in sewer or storm system.
A. Depositing of Solid Waste in Sewer Directly. No person shall empty, throw or deposit in any storm drain, storm or sanitary sewer manhole, or sanitary sewer cleanout any solid waste, hazardous waste, infectious waste, recyclable materials, or compostable materials.

B. Kitchen Waste. Kitchen waste may be deposited into the sewer systems through a mechanically operated disposal device under the following conditions:

1. The disposal device must be attached to the sewer in accordance with the plumbing code of the city and installed correctly.

2. The device must be capable of grinding the waste simultaneously with a flow of water of not less than two gallons per minute, or in such additional quantity as is necessary to cause the ground waste to flow readily through the sewer system. The waste shall be ground to the point where it is capable of meeting the following requirements:

a. At least 40 percent shall pass a No. 8 sieve;

b. At least 65 percent shall pass a No. 3 sieve;

c. One hundred percent shall pass a one-half-inch sieve; and

d. Sieves shall be U.S. Standard.

3. The use of garbage grinders for the purpose of preparing waste for deposit into the sewer system shall be limited to:

a. Residential premises;

b. Supermarkets, restaurants, hotels and establishments where food or drink is prepared and consumed on the premises. (Ord. 1816 § 2, 2007)

8.08.560 Dumping ground for solid waste or other materials.
No person shall permit any land owned, leased, occupied or controlled by him/her in the city to be used as a dumping ground for solid waste or other material of any kind whatsoever, and no person shall deposit any solid waste or other material upon any land in the city. (Ord. 1816 § 2, 2007)

8.08.570 Removal of litter required.
A. Procedures. The accumulation of litter on private property is declared to be a public nuisance. If the owner or occupant in control of any premises in the city fails to remove all litter which is located on the property after due warning or citation, the city manager shall issue a notice to the owner to remove the litter. The notice shall contain a description of the property and state that, if the litter condition is not corrected within 10 days, the property will be cleaned by the city and the owner will be billed for the cleanup cost. Any city employee or contracting agent is expressly authorized to enter upon private property to remove accumulated litter. It is unlawful for any person to interfere, hinder or refuse to allow such employee or agent to enter upon private property for such purpose and to remove litter in accordance with the provisions of this article. Any person owning, occupying, renting, managing, leasing or controlling real property in the city shall have the right to remove litter or have the same removed at his/her own expense any time prior to the arrival of the city for such purpose.

B. Assessment of Costs.

1. The city manager shall keep an account of the cost to the city to remove the litter as provided for each separate lot or parcel of land, and shall place such account in a report and assessment list to be sent to the city council. The report shall identify each separate lot or parcel of land, and shall state the cost proposed to be assessed against it. The report shall be filed with the city clerk. The city clerk shall mail a notice to each name on the assessment list. The notice shall contain the following:

a. The cost of the litter removal;

b. The place and time of the city council hearing to consider and confirm the assessment report and list;

c. That failure to make any objection to the report and list shall be deemed a waiver; and

d. That, upon confirmation by the city council, the amount of the assessment shall be payable.

2. The assessments shall be confirmed by resolution of the city council, and the amount shall constitute a lien on the property assessed until paid. (Ord. 1816 § 2, 2007)

8.08.580 Construction and demolition site solid waste.
It shall be the duty of the owner, agent or contractor in charge of any construction or demolition site to have adequate containers on the site for the disposal of solid waste to prevent litter generation. Owner, agent or contractor shall make appropriate arrangements for the collection of solid waste by franchisee or for transportation of such material to an authorized facility for final disposition pursuant to LMC 8.08.030(A). (Ord. 1816 § 2, 2007)

8.08.590 Transportation of loose cargo.
It is unlawful for any person to transport solid waste, compostable materials, recyclable materials, construction and demolition debris or any other loose cargo by truck or other motor vehicle within the city unless such cargo is covered and secured in such manner as to prevent depositing of litter on public and private property. (Ord. 1816 § 2, 2007)

8.08.600 Vehicle presumption.
In those cases of littering from vehicles where the violators cannot be apprehended immediately, a rebuttable presumption shall be applied that the registered owner of the vehicle committed the violation. (Ord. 1910 § 8, 2010; Ord. 1816 § 2, 2007. Formerly 8.08.610)

8.08.610 Door-to-door handouts.
Persons distributing literature door-to-door shall not deposit it on public property and shall distribute it in such a way that it is not blown from the place of distribution. (Ord. 1910 § 8, 2010; Ord. 1816 § 2, 2007. Formerly 8.08.620)

8.08.620 Securing potential waste.
All receptacles, containers, storage areas, and vehicles containing solid waste, recyclable materials, or compostable materials shall be sufficiently covered or otherwise

secured to prevent such material from escaping. (Ord. 1910 § 8, 2010; Ord. 1816 § 2, 2007. Formerly 8.08.630)

8.08.630 Commercial litter maintenance.
Persons in possession or control of commercial premises shall keep those exterior portions of the premises which are accessible or viewable by the public, including but not limited to areas used for parking, doorways, and alleys, and the area between the face of the curb line abutting the properties and the nearest building thereon, free of all waste matter. (Ord. 1910 § 8, 2010; Ord. 1816 § 2, 2007. Formerly 8.08.640)

8.08.640 Distribution of merchandise.
Persons distributing merchandise of any kind, including food and beverages, shall provide adequate disposal and recyclable materials containers, and frequent enough removal of their contents, to enable patrons to deposit all waste material generated by the merchandise into the containers. (Ord. 1910 § 8, 2010; Ord. 1816 § 2, 2007. Formerly 8.08.650)

8.08.650 Enforcement.
This chapter may be enforced by the police department, the fire department and employees of the public service department, as authorized by the city manager. (Ord. 1910 § 8, 2010; Ord. 1816 § 2, 2007. Formerly 8.08.660)

Article VIII. Container Enclosure Facilities

8.08.700 Purpose of article.
Public Resources Code Section 42900 et seq. establishes the following:

A. By September 1, 1994, a local agency must adopt an ordinance for collecting and loading recyclable materials in development projects or adopt the state model ordinance.

B. The local agency shall enforce the local ordinance or state model ordinance.

C. Cities and counties must divert 50 percent of all solid waste by January 1, 2000, through source reduction, recycling and composting activities. Diverting 50 percent of all solid waste requires the participation of the residential, commercial, industrial and public sectors.

D. The lack of adequate areas for collecting and loading recyclable materials compatible with surrounding land uses is a significant impediment to diverting solid waste and constitutes an urgent need for state and local agencies to address access to solid waste for source reduction, recycling and composting activities. This article is intended to help meet these needs.

E. As well, this article establishes the requirements for providing solid waste, recyclable materials and compostable materials enclosure areas. It is intended that such areas be provided in order to obtain the consolidation of solid waste, recyclable materials and compostable materials for disposal or processing in a manner that will ensure the public health, safety and welfare. (Ord. 1816 § 2, 2007)

8.08.710 Enclosure facilities required.
The owner or occupant of land or buildings used for any purpose shall provide and maintain the enclosure facilities as required by LDC 6.03.130. (Ord. 1901 § 3 (Exh. A § 15), 2010; Ord. 1816 § 2, 2007)

Article IX. Street Sweeping Services

8.08.800 Purpose of article and findings.
The city council hereby finds and declares as follows:

A. It is the policy of the city that the accumulation of debris in the streets in the city of Livermore be handled in a safe, sanitary, routine and efficient manner so as to maximize the reduction of material that might otherwise enter the storm drain system and contaminate area creeks, and maintain the good condition, cleanliness and safety of city rights-of-way, medians and other public areas.

B. Street sweeping is a core governmental service necessary for the public health, sanitation, safety and welfare of all the residents of the city of Livermore. It supplements solid waste collection by the franchisee.

C. The city currently has approximately 9,100 residential and commercial curb miles.

D. The Alameda Countywide Clean Water Program's Stormwater Quality Management Plan (SWMP) is the basis of the National Pollutant Discharge Elimination System (NPDES) stormwater permit issued by the Regional Water Quality Control Board. The SWMP, in conjunction with the NPDES permit adopted by the Regional Water Quality Control Board, meets the requirements of the Federal Clean Water Act for stormwater discharges to reduce pollutants to the maximum extent possible. The SWMP contains a number of performance standards including the requirement for a fixed street sweeping schedule, leaf removal and routine maintenance activities to maximize reduction of pollutants.

E. It is the city's intention that street sweeping services be financed by a combination of moneys collected through the solid waste collection fees and Alameda Countywide Clean Water Program. The purpose of this article is to authorize the collection of some component through the solid waste collection fees.

F. The fee for street sweeping services is based on the cost of operation, maintenance, and short- and long-term capital expenditures and apportioned for the number of miles swept. It does not exceed the estimated reasonable cost of the service.

G. This article is categorically exempt under the provisions of the California Environmental Quality Act (CEQA) Guidelines Section 15301. (Ord. 1827 § 1, 2007)

8.08.810 Definitions.
In this article:

"Street sweeping services" includes the activity of street sweeping, in residential and commercial areas of the city, the operation and maintenance of street sweeping equipment, and the purchase of new street sweeping equipment as needed.

"Street" includes all streets with or without medians, avenues, lanes, alleys, courts, parking lots, paths or other public ways in the city which have been or may hereafter be designated and open to public use (LMC 12.08.010(D)). (Ord. 1827 § 1, 2007)

8.08.820 Fees.
A. Amount of Fee. The city council may from time to time establish fees for street sweeping services. The amount of the fee shall be established by resolution of the city council following a noticed public hearing. The fee may be combined with the fees for solid waste collection services.

B. Character of Fee. The city council has determined that the fee is related to the cost of the service provided and shall not exceed the estimated reasonable costs of the service. This fee is not imposed as an incident of property ownership within the meaning of Proposition 218 California Constitution Article XIIID, Section 6.

C. Collection. Each owner and occupant of the city receiving waste collection services from the franchisee shall be billed by the franchisee a fee for street sweeping services in accordance with the rates established by the city council. The fee shall be collected by the franchisee as part of the solid waste collection fee, in conformance with LMC 8.08.130. (Ord. 1827 § 1, 2007)

8.08.830 Transfer, deposit, use and accounting of fees.
A. Transfer. The franchisee shall convey the street sweeping services fee to the city in accordance with the terms of the franchise agreement. (See Franchise Agreement, Section 7.4.)

B. Deposit. When conveyed to the city, the fees shall be kept in a separate line item account together with any interest earned.

C. Use of Fee. The fees shall be used only to defray the cost of street sweeping services, as defined in LMC 8.08.810, including operations, maintenance, and short- and long-term capital expenditures. (Ord. 1827 § 1, 2007)

Percent Reduction from Enhancements

The City of Livermore will receive a 5 percent reduction credit for implementing specific enhanced control measures described in *Description of Enhanced Level of Implementation* section above. The 5 percent reduction credit will be applied to the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of Livermore. This percent reduction credit was obtained from the *Trash Load Reduction Tracking Method Report* (BASMAA 2011e) and is presented in the Trash Load Reduction Summary Table included in Section 5.

CR-5: Anti-Littering and Illegal Dumping Enforcement Activities

Successful anti-littering and illegal dumping enforcement activities include laws or ordinances that make littering or dumping of trash illegal. Laws are enforced by various municipal agency staff (e.g., police, sheriff and public works department staff) who issue citations in response to citizen complaints or other enforcement methods (e.g., surveillance cameras, signage and/or physical barriers installed at illegal dumping hot spots). In some California jurisdictions, the minimum fine for littering is $500 and the maximum penalty for highway littering is $1000 (City of San Francisco 2001). However, it is difficult to enforce small littering events unless they are witnessed or solid proof exists linking the offender to the litter. As a result, enforcement tends to focus on larger scale illegal dumping activities.

Baseline Level of Implementation

The baseline trash load described in Section 2.0, assumes that the City of Livermore has adopted a basic anti-littering and illegal dumping enforcement program that entails receiving and responding to complaints from citizens as resources allow. The City of Livermore implements an active anti-littering and illegal dumping abatement and enforcement program. Residents may report littering and illegal dumping incidents by the "Litter-Bug Hotline at 925-371-4766 or complete online form via the City's website at the following link:
http://www.cityoflivermore.net/citygov/pw/maint/request.asp

All incidents reported through the hotline or via the website are promptly investigated by City staff.

Enhanced Level of Implementation

The City of Livermore will continue to implement the "Litter-Bug Hotline" and promptly investigate all reported events in a thorough and prompt manner as part of its Short Term Trash Load Reduction Plan.

Percent Reduction from Enhancements

The City of Livermore will receive a 2 percent reduction credit for implementing specific enhanced control measures described in *Description of Enhanced Level of Implementation* section above. The 2 percent reduction credit will be applied to the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of Livermore. This percent reduction credit was obtained from the *Trash Load Reduction Tracking Method Report* (BASMAA 2011e) and is presented in the Trash Load Reduction Summary Table included in Section 5.

QF-5: Full-Capture Treatment Devices

As defined by the Municipal Regional Stormwater Permit (MRP), a full-capture system or device is any single device or series of devices that traps all particles retained by a 5 mm mesh screen and has a design treatment capacity of not less than the peak flow rate (Q) resulting from a one-year, one-hour, storm in the sub-drainage area. A list of the full-capture systems and devices recognized by the San Francisco Bay Regional Water Quality Control Board (Water Board) is included in *Trash Load Reduction Tracking Method Report* (BASMAA 2011e). Trash loads reduced via publically or privately owned and operated devices within a Permittee's jurisdictional area that have been recognized by the Water Board as full-capture may be used to demonstrate attainment of trash load reduction goals.

Baseline Level of Implementation

Prior to adoption of the MRP, some Pemittees installed and maintained full capture devices. To avoid penalizing these early implementers, an applicable control measure implemented within a Permittee's jurisdictional area prior to the effective date of the MRP will be credited equally to a control measure implemented after the effective date. Therefore, the baseline level of implementation is no trash full-capture devices have been installed.

Enhanced Level of Implementation

A total of 189 trash full-capture treatment devices have been or will be installed in the City of Livermore prior to July 1, 2014. A list of these full-capture devices is included in Table QF-6-1. All devices listed within this table are enhanced trash control measures. Table QF-6-1 also includes the area treated and the calculated trash load reduced from each full-capture treatment device. These calculations are consistent with the approach described in the *Trash Load Reduction Tracking Method Report* (BASMAA 2011e).

Percent Reduction from Enhancements

The total estimated annual volume of trash that will be reduced by July 1, 2014 as a result of implementing full capture devices is 13,441 gallons. This volume is equal to approximately a 17 percent reduction in the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of Livermore. Both values provided within this section are included in Trash Load Reduction Summary Table included in Section 5.

Additional Information and Current Status of the Installation of Full Trash Capture Devices

At the time of this report the City of Livermore is currently working with West Coast Storm, Inc. to install an additional 187 "Connector Pipe" full trash capture device in the City of Livermore to provide full trash capture with the specific MRP requirements for the City of Livermore. Two "Connector Pipe" full trash capture device have been installed as part of the BASMAA Baseline Trash Loading Rates Project. These additional 187 full trash capture device shall be installed at the areas listed below in the following priority:

1. Las Positas/ N. Livermore Avenue: Walmart and Home Depot Shopping Centers Area
2. Constitution/Airway Blvd./N.Canyons Parkway/Independence Drive Area
3. Airway Blvd./ Highway 84/ Kittyhawk/Nissen Drive
4. First Street/N. Mines Road/ Las Positas Rd- Target/Plaza 580 Center

Please reference the maps in Attachment QF-6-A for maps of the areas listed in this section. Please note Table QF-6-1 is not completed, as this is currently being updated by our contractor who is installing these devices. Subsequent Annual Stormwater Reports shall include a complete and updated table.

Table QF-6-1. Trash full-capture treatment devices within the jurisdictional boundaries of the City of Livermore that are planned for installation by July 1, 2014.

Device ID	Public or Private	Device Name	Location (Cross Streets)	Installation Date/Anticipated Installation Date	Total Area Treated (acres)	Trash Load Reduced
See explanation in narrative. An updated table to be included in subsequent Annual Stormwater Reports.						

QF-6: Creek/Channel/Shoreline Cleanups

Creek/channel/shoreline cleanups have been successful in removing large amounts of trash from San Francisco Bay area creeks and waterways; and increasing citizen's awareness of trash issues within their communities. Creek/channel/shoreline cleanups are conducted as single-day events or throughout the year by volunteers and municipal agencies. Since volunteers and municipal agencies have the common goal of clean creeks and waterways, their efforts sometimes overlap. This is apparent with some municipal agencies using volunteers to help assess and clean designated trash hot spots during single-day volunteer events.

Baseline Level of Implementation

Trash reduced via creek/channel/shoreline cleanups was not accounted for in the City of Livermore's baseline trash load described in Section 2.0. Therefore, implementation of any of the control measures described in this section is considered to be an enhancement and can be used to demonstrate progress towards load reduction goals.

Enhanced Level of Implementation

Prior to July 1, 2014, the City of Livermore will conduct MRP-required[8] and the following non MRP-required creek/channel/shoreline cleanups[9] listed below. Both types of cleanups will be conducted each year and the volume of trash removed will be tracked to demonstrate trash loads reduced.

Control Measure	Load Reduction (gallons)
Name of Permittee-led Creek Cleanups	
Trash Hot Spot- AM_SB-PB #1	434
Trash Hot Spot- ALP@Livermore Bridge #2)	260
Trash Hot Spot-AM-H-MP#3)	43
Trash Hot Spot- ALP-NTP#4	260
Name of Volunteer-led Creek Cleanups	
Granada Native Gardens- Workday	208
TOTAL REDUCTION	**1,205**

Percent Reduction from Enhancements

The total estimated annual volume of trash that will be reduced by July 1, 2014 as a result of implementing creek/channel/shoreline cleanups is 1,205 gallons. This volume is equal to

[8] Creek/channel/shoreline cleanups conducted in accordance with Permit Provision C.10.b.
[6] All "other" creek/channel/shoreline cleanups conducted by a municipality that are not required by Provision C.10.b.

approximately a 4.6 percent reduction in the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of Livermore. Both values provided within this section are included in Trash Load Reduction Summary Table included in Section 5.

5.0 SUMMARY OF TRASH CONTROL MEASURE ENHANCEMENTS

The City of Livermore is committed to reducing the potential for trash impacts in local water bodies in the San Francisco Bay Area. The planned enhanced trash control measures described in Section 3.0 are also listed in Table 5-1. The enhancements are intended to comply with the 40% trash load reduction goal in MRP provision C.10.

Table 5-1. Planned enhanced trash control measure implementation within the jurisdictional boundaries of the City of Livermore and associated trash loads reduced.

Trash Control Measure	% Reduction (Credits)	Trash Load Reduced (gal/year)	Cumulative % Reduction (Compared to Baseline)
Single-use Carryout Plastic Bag Ordinance (CR-1)	10.0	2,636	10.0
Polystyrene Foam Food Service Ware Ban (CR-2)	8.0	2,109	18.0
Public Education and Outreach Programs (CR-3)	8.0	2,109	26.0
Activities to Reduce Trash from Uncovered Loads (CR-4)	5.0	1,318	31.0
Anti-Littering and Illegal Dumping Enforcement Activities (CR-5)	2.0	527	33.0
Full-capture Treatment Devices (QF-5)	NA	4,547	50.3
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal) (QF-6)	NA	1,205	54.8

5.1 Annual Reporting and Progress Towards Trash Load Reduction Goal(s)

Consistent with MRP Provision C.10.d (i), the City of Livermore intends to report on progress towards MRP trash load reduction goals on an annual basis beginning with the Fiscal Year 2011-2012 Annual Report. Annual reports will include:

1. A brief summary of all enhanced trash load reduction control measures implemented to-date;
2. The dominant types of trash likely removed via these control measures;
3. Total trash loads removed (credits and quantifications) via each control measure implementation; and
4. A summary and quantification of progress towards trash load reduction goals.

Similar to other MRP provision, annual reporting formats will be consistent region-wide. Annual reports are intended to provide a summary of control measure implementation and demonstrate progress toward MRP trash reduction goals. For more detailed information on specific control measures, the City of Livermore will retain supporting documentation on trash load reduction control measure implementation. These records should have a level of specificity consistent with the trash load reduction tracking methods described in the *BASMAA Trash Load Reduction Tracking Method Technical Report* (BASMAA 2011e).

5.2 Considerations of Uncertainties

Baseline trash loading and load reduction estimates are based on the best available information at the time this Short-Term Plan was developed. As with any stormwater loading and reduction estimate, a number of assumptions were used during calculations and therefore uncertainty is inherent in the baseline trash load estimate presented in Section 2.0 and the load reduction estimate presented in this section. For these reasons, the baseline loading estimates presented in this plan should be considered first-order estimates. During the implementation of this Short-Term Plan and subsequent plans, additional information may become available to allow the calculation of a more robust baseline load.

6.0 IMPLEMENTATION SCHEDULE

Implementation of enhanced trash control measures by the City of Livermore is currently planned to occur in a timeframe consistent with MRP requirements. A preliminary implementation schedule for all planned enhancements is described in Table 5-1. This schedule provides a timeframe for reducing trash discharged from the City of Livermore's MS4 by 40%.

Based on new information that becomes available during the implementation of this Short-Term Plan (e.g., revisions to baseline loading estimates or load reduction credits of quantification formulas, etc), or if circumstances arise during implementation of the Plan that were not anticipated at the time of submission, the City of Livermore may chose to amend or revise this Plan and/or the associated implementation schedule. If revisions or amendments occur, a revised Short-Term Plan and implementation schedule will be submitted to the Water Board via the City of Livermore's annual reporting process.

Table 5-1. Preliminary implementation schedule for enhanced trash control measures in the City of Livermore.

Trash Control Measure	Beginning Date of Implementation
Single-use Carryout Plastic Bag Ordinance (CR-1)	January 1, 2013
Polystyrene Foam Food Service Ware Ban (CR-2)	July 1, 2012
Public Education and Outreach Programs (CR-3)	Current and on-going
Activities to Reduce Trash from Uncovered Loads (CR-4)	Current and on-going
Anti-Littering and Illegal Dumping Enforcement Activities (CR-5)	Current and on-going
Full-capture Treatment Devices (QF-5)	Complete by November 2012
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal) (QF-6)	Current and on-going

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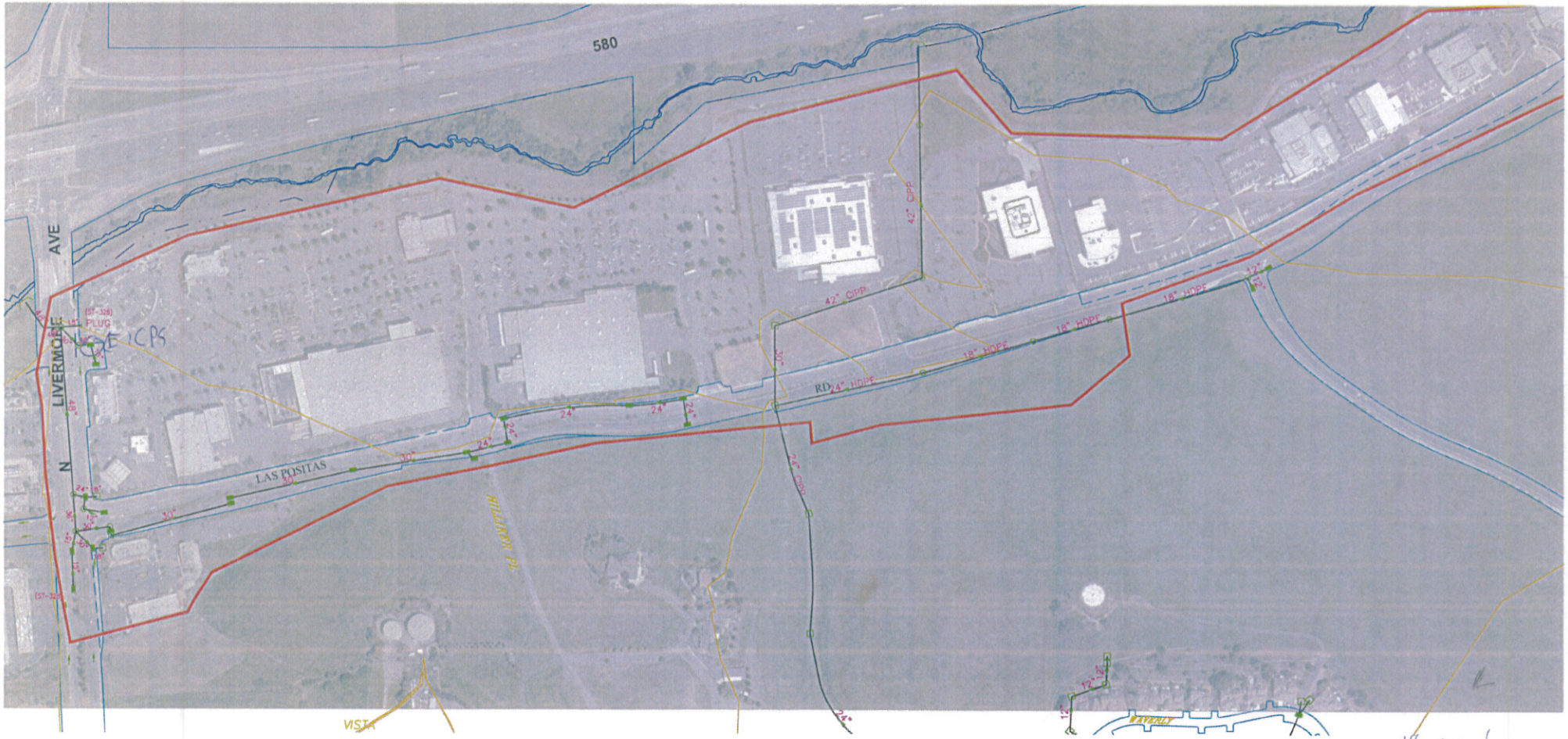
Attachment QF-6-A



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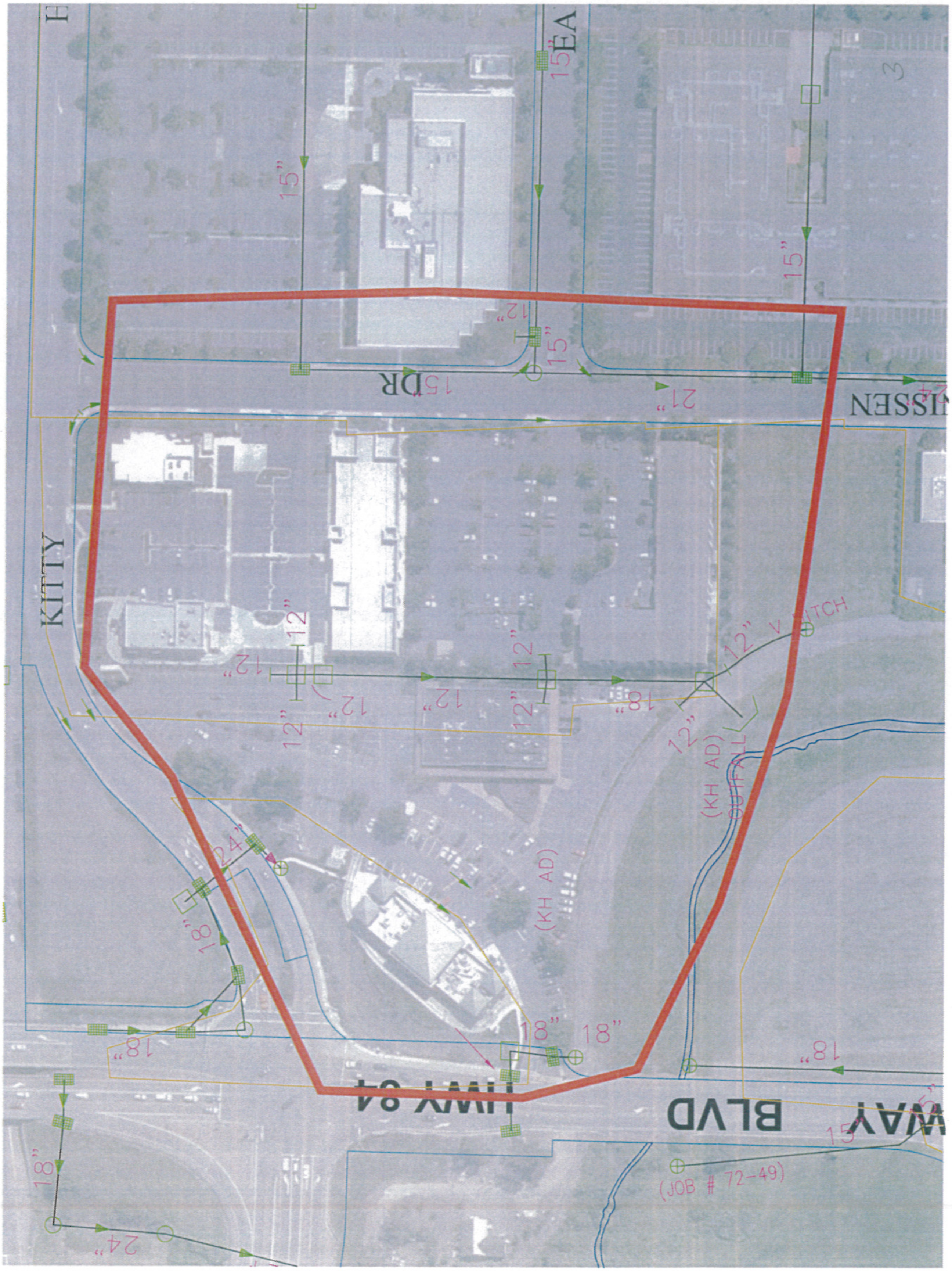

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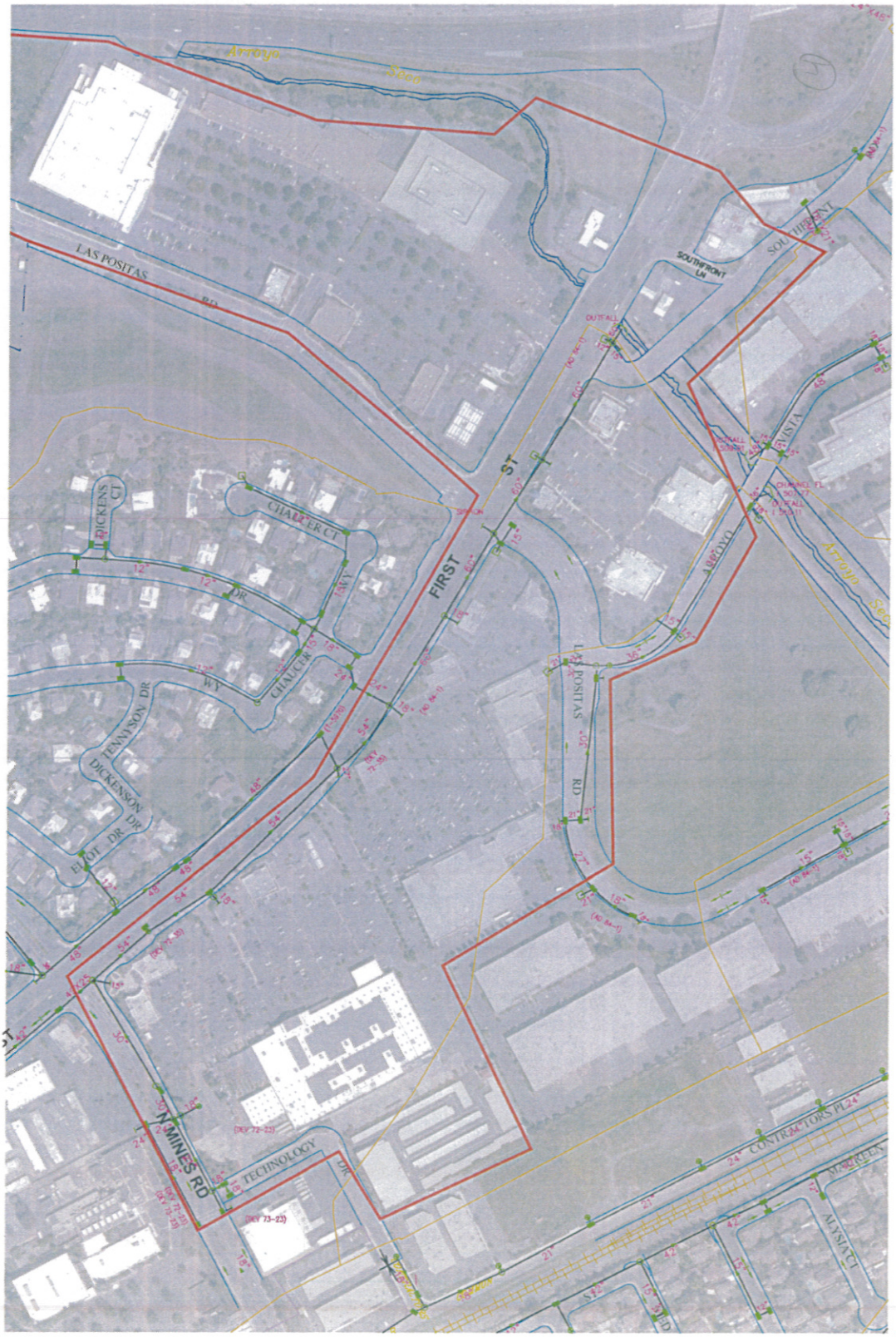
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Attachment TLR-Calculator

Trash Load Reduction Calculator (Version 1.4.3) - 12/22/11

Disclaimer: This calculator is intended to provide Permittees with an ***estimate*** of the predicted trash load reductions due to the implementation of enhanced control measures. Load reduction credits and quantfication methods/formulas used in this calculator are consistent with those presented in the Trash Load Reduction Tracking Method Technical Report (1/6/12). Please note: load reductions calculated are planning level estimates and should be confirmed by Permittees prior to reporting.

Rules:

1) **Read all instructions below and on specific tabs before using**
2) **Do not delete or rearrange tabs**
3) **Tabs MUST be completed in the following order:**
   a) CR-1 Plastic Bag Policy
   b) CR-2 Polystyrene Policy
   c) CR-3 Public Ed
   d) CR-4 Uncovered Loads
   e) CR-5 Anti-Littering
   f) CR-6 Container Mng/BIDs
   g) CR-7 Takeout Container Policy
   h) QF-1 On-Land Cleanups
   i) QF-2 Street Sweeping - REQUIRES DATA INPUT FROM GIS CALCULATIONS
   j) QF-3 Partial Capture - Litter Booms, Curb Inlet Screens and Pump Station Retrofits
   k) QF-4 Inlet Maintenance
   l) QF-5 Full Capture - Small and Large Devices
   m) QF-6 Creek & Shoreline Cleanups

Instructions:

There are Three types of user input in this calculator

1) Pull-down menus: highlighted in pink. Select the appropriate option for your jurisidiction
2) Mandatory Fill-in Cells: highlighted in green. Responses must be entered to calculate the load reduced
3) Optional "Fill-in" Cells: highlighted in blue. Write-in the appropriate value/response. These cells do not need to be completed to calculate the load reduced

1. Click on the yellow "Summary" Tab. In the green highlighted cells, enter the correct city/county name and other pertinent information from Section 2.0 of your Draft Short-Term Load Reduction Plan. "Existing Enhanced Street Sweeping"should be provided by EOA with your Draft Section 2.0.

2. Beginning with the tab for the first applicable control measure, read the specific instructions for that control measure (in yellow) and enter information as prompted into pink cells. Estimated load reductions for each control measure are presented in the applicable tab and in the Summary Tab.

3. After completing all the tabs, the estimated load reduced and the percent reduction from the implementation of enhanced control measures will be shown in the yellow "Summary" tab

Load Reduction Summary

Permittee	City of Livermore		
Land Area within Permittee's Geographical Boundaries	11,915	acres	(From records)
Number of Storm Drain Inlets	4,104	Storm Drain Inlets	(From records)
Effective Load Area	8,918	acres	(From Table 2-2 of Short-Term Plan)
Generated Load	38,700	gallons/year	(From Table 2-3 of Short-Term Plan)
Load Removed via Baseline Street Sweeping	10,954	gallons/year	(From Table 2-3 of Short-Term Plan)
Load Removed via Baseline SDI Maintenance	1,387	gallons/year	(From Table 2-3 of Short-Term Plan)
Load Removed via Baseline Pump Station Maintenance	0	gallons/year	(From Table 2-3 of Short-Term Plan)
Preliminary Trash Baseline Load	**26,359**	gallons/year	
Total Load Reduced:	**14,451**	gallons/year	
% Reduction	**54.8%**		

Control Measure	Individual Control Measure		Cumulative		
	Load Reduction Credit (%)	Load Reduced (gals/year)	Load Reduction (%)	Load Reduced (gals/year)	Load Remaining (gals/year)
Existing Enhanced Street Sweeping	-	0	**0.0%**	**0**	26,359
Credits					
CR-1: Single-Use Carryout Bag Policy	10.0%	2,636	**10.0%**	**2,636**	23,723
CR-2: Polystyrene Foam Food Service Ware Policy	8.0%	2,109	**18.0%**	**4,745**	21,614
CR-3: Public Education and Outreach Programs	8.0%	2,109	**26.0%**	**6,853**	19,506
CR-4:Reduction of Trash from Uncovered Loads	5.0%	1,318	**31.0%**	**8,171**	18,188
CR-5: Anti Littering and Illegal Dumping Enforcement	2.0%	527	**33.0%**	**8,698**	17,661
CR-6: Improved Trash Bin/Container Management	0.0%	0	**33.0%**	**8,698**	17,661
CR-7: Single-Use Food and Beverage Ware Policy	0.0%	0	**33.0%**	**8,698**	17,661
Quantifications					
QF-1: On-Land Clean-up	-	0	**33.0%**	**8,698**	17,661
QF-2: Enhanced Street Sweeping	-	0	**33.0%**	**8,698**	17,661
QF-3: Partial Trash Capture	-	0	**33.0%**	**8,698**	17,661
QF-4: Inlet Maintenance	-	0	**33.0%**	**8,698**	17,661
QF-5: Full Trash Capture	-	4,547	**50.3%**	**13,246**	13,113
QF-6: Creek Clean-up	-	1,205	**54.8%**	**14,451**	11,908
Totals	**NA**	**14,451**	**54.8%**	**14,451**	**11,908**

CR-1: Single-use Carryout Bag Policy

Description: Area-wide credit that is based on the adoption of local or countywide policy or implementation of statewide action that prohibits or significantly reduces the distribution of single-use plastic carryout bags. Additional credit is also available for the implementation of fees for all other types of single-use carryout bags (paper et al.).

Instructions:

1) In Column C, select the level of effort (e.g., not implemented, mandatory fee or mandatory discount) for both tiers from the pull down menus (highlighted in pink).

A description of each tier can be found below the table.

If the higher tier is implemented, the lower tier must also be implemented.

2) Timing (date of implementation), cost for each tier, and other benefits or synergies are optional, and may be filled in (highlighted in blue).

Control Measure	Level of Effort	Load Reduction Credit (%)	Timing	Cost ($)	Other Benefits/Synergies
Prohibit the distribution of single-use plastic bags at:					
Tier 1 - Large Supermarkets	All Types of Single-Use Bags	8.0			
Tier 2 - Retailers that Sell Packaged Food	All Types of Single-Use Bags	2.0			
Tier 3 - All Retail (Except Restaurants)	Not Implemented	0.0			
TOTAL REDUCTION CREDIT		**10.0**		**0**	

Description of Tiers

Tier 1 – Prohibit Distribution at Large Supermarkets – Adoption of a local ordinance or implementation of a statewide or countywide action that prohibits large supermarkets from distributing single-

Tier 2 – Prohibit Distribution at Retail Establishments that Sell Packaged Foods – Adoption of a local ordinance or implementation of a statewide or countywide action that prohibits retail

Tier 3 – Prohibit Distribution at All Retail Establishments (with the Exception of Restaurants) – Adoption of a local ordinance or implementation of a statewide or countywide action that prohibits

Note: To receive the trash load reduction credits described above, Permittees must implement in parallel with the ordinance a basic public education/outreach actions focused on the distribution of

CR-2: Polystyrene Foam Food Ware Policy

Area-wide credit based on the adoption of local, countywide ordinances or implementation of statewide actions that reduce the distribution of polystyrene foam food ware by vendors. Prohibitions can be implemented at two tiers: Permittee-owned properties/events and at all food service vendors. Control measures must include an active enforcement program.

Instructions:

1) In Column C, select the level of effort (e.g., not implemented, mandatory fee or mandatory discount) for both tiers from the pull down menus (highlighted in pink).

A description of each tier can be found below the table.

If the higher tier is implemented, the lower tier must also be implemented.

2) Timing (date of implementation), cost for each tier, and other benefits or synergies are optional, and may be filled in (highlighted in blue).

Control Measure	Level of Effort	Load Reduction Credit (%)	Timing	Cost ($)	Other Benefits/Synergies
Prohibit the distribution of Polystyrene foam foodware at:					
Tier 1 - City sponsored events/events on City Property	Implemented	2.0			
Tier 2 - All food service vendors with active compliance program	Implemented	6.0			
TOTAL REDUCTION CREDIT		**8.0**		0	

Description of Tiers

Tier 1 – Prohibit Distribution at Permittee-sponsored Events or Permittee-owned Property – Adoption of a local ordinance or implementation of statewide or countywide actions that prohibit food vendors from distributing polystyrene foam food ware at Permittee-sponsored events or on Permittee-owned property will receive a trash load reduction credit of 2 percent.

Tier 2 –Prohibit Distribution by Food Service Vendors – Adoption of a local ordinance or implementation of a statewide or countywide action that prohibits food vendors from distributing polystyrene foam food ware within their jurisdictional boundaries will receive a trash load reduction credit of 8 percent.

Note: To receive the trash load reduction credits described above, Permittees must implement in parallel with the ordinance public education/outreach actions focused on food service vendors, and enforcement actions designed to ensure compliance with the ordinance. Additionally, if a control measure does not fit within one of the two tiers described above, a Permittee may propose a credit commensurate with the extent of the ordinance.

CR-3: Public Education and Outreach Program

Area-wide credit based on the implementation of advertising campaigns, outreach to school-aged children/youth, the use of media, and community outreach events, consistent with the MRP. Public education programs must include an effectiveness evaluation component to evaluate an increase in the awareness or a behavior change in the public.

Instructions:

1) For each control measure, select the level of effort (e.g., not implemented, implemented) from the pull down menus (highlighted in pink).
in order to receive credit for implementation for outreach based control measures, a minimum number of events must organized to receive credit.
Descriptions of each control measures and the minimum number of events for outreach control measures are listed below the table.

2) Timing (date of implementation), cost for each tier, and other benefits or synergies are optional, and may can be filled in (highlighted in blue)

Control Measure	Level of Effort	Load Reduction Credit (%)	Timing	Cost	Other Benefits/Synergies
Advertising campaigns	Implemented	3.0			
Outreach to school-age children/youth	Implemented	2.0			
Media relations (free media)	Implemented	1.0			
Community outreach events	Implemented	2.0			
TOTAL REDUCTION CREDIT		**8.0**			

Description of Control Measures

Advertising Campaigns – Participation in or contribution to advertising campaign(s) on trash/litter in waterways with the goal of significantly increasing overall awareness of stormwater runoff pollution prevention messages and behavior changes in a target audience. Advertising campaigns must include the following attributes:

- Specific anti-littering messages for reducing litter;
- A comprehensive advertising plan designed to reach the target audience; and
- Pre and post-campaign surveys which identify and quantify the audiences' knowledge, trends and attitudes and/or practices; and measures the overall population's awareness of the messages and behavior changes achieved by the campaign.

Outreach to School-age Children or Youth – Active implementation of outreach programs (e.g., assemblies, presentations, etc.) designed to promote anti-littering behavior in school-age children (K through 12) at an implementation listed in the table below. Outreach programs must be community-based and/or grassroots in nature, and include an evaluation component (e.g., teacher or student feedback) to determine effectiveness.

Permittee Population	# of Outreach Events
<10,000	2
10,001 – 40,000	3
40,001 – 100,000	4
101,001 – 175,000	5
175,001 – 250,000	6
> 250,000	8

Media Relations (Use of Free Media) – Participation in or contribution to a media relations campaign which uses free media/media coverage (i.e., public service announcements and free advertising spots) focusing on litter issues (e.g., publicity of local creek/neighborhood cleanups, outreach promoting product bans, steps initiated to alleviate trash from homeless encampments, etc.). The media relations campaign must be designed to significantly increase the overall awareness of anti-litter messages and associated behavior change in target

Community Outreach Events – Organization of and participation in focused outreach and education programs at an implementation listed in the table below in high priority communities where litter is prevalent. Outreach programs must be community-based and/or grassroots in nature, and include an evaluation component (e.g., participant feedback) to determine effectiveness.

Permittee Population	# of Outreach Events
<10,000	2
10,001 – 40,000	3
40,001 – 100,000	4
101,001 – 175,000	5
175,001 – 250,000	6
> 250,000	8

CR-4: Activities to Reduce Trash from Uncovered Loads

Area-wide credit that is based on implementation of prescriptive language in Permittee trash and/or construction debris hauling contracts, and actively working with local law enforcement to establish an enhanced enforcement program for vehicles with uncovered loads.

Instructions:

1) For each control measure, select the level of effort (e.g., not implemented, implemented) from the pull down menus (highlighted in pink).
A description of each Tier can be found below the table.

2) Timing (date of implementation), cost for each tier, and other benefits or synergies are optional, and may can be filled in (highlighted in blue)

Control Measure	Level of Effort	Load Reduction Credit (%)	Timing	Cost	Other Benefits/Synergies
Prescriptive language in municipal contracts for trash and debris haulers	Implemented	1.0			
Implementation of an enhanced enforcement program for vehicles with uncovered loads	Implemented	4.0			
TOTAL REDUCTION CREDIT		**5.0**			

Description of Control Measures

Require Municipal Trash Haulers to Cover Loads – development and inclusion of language in a Permittee's hauling service contract(s) that requires contracted trash and construction debris haulers to cover loads when transporting trash and debris to municipally or privately-owned landfills and transfer stations.

Implement an Enhanced Enforcement Program for Vehicles with Uncovered Loads – Permittees actively working with local law enforcement to establish an enhanced enforcement program for vehicles with uncovered loads. Enhanced enforcement programs may include the following:

- Adoption of an ordinance prohibiting the transportation of trash or debris without a cover;
- Citations and fines for vehicles spotted on roads in an individual Permittee's jurisdictional area with uncovered loads; or,
- Distribution of tarps for a fee to haulers or other vehicles that arrive at landfills and transfer stations with uncovered loads. Each subsequent visit without a tarp will result in an additional fee for a tarp, prompting haulers to bring their own tarp.

CR-5: Anti Litter/Illegal Dumping

Area-wide credit is based on the implementation of active compliance and enforcement programs, and use of surveillance cameras and physical barriers to reduce dumping.

Instructions:
1) For each control measure, select the level of effort (e.g., not implemented, implemented, percent of hot spots covered) from the pull down menus (highlighted in pink).
A description of each Tier can be found below the table.

2) Timing (date of implementation), cost for each tier, and other benefits or synergies are optional, and may can be filled in (highlighted in blue)

Control Measure	Level of Effort	Load Reduction Credit (%)	Timing	Cost	Other Benefits/Synergies
Anti-littering and illegal dumping investigation and enfocement program	Implemented	2.0			
Use of surveillance cameras or other deterrents	Not Implemented	0.0			
Use of physical barriers/improvements at a percentage of hotspots	Not Implemented	0.0			
TOTAL REDUCTION CREDIT		**2.0**			

Description of Control Measures

Anti-Littering and Illegal Dumping Enforcement Program – Implementation of an active anti-littering and illegal dumping enforcement program in the year of interest that includes:

- Thorough investigations of complaints received from an illegal dumping hotline;
- The implementation of enforcement procedures including citations (as warranted); and,
- The collection of evidence (e.g., names, addresses, etc.) from illegal dump sites (i.e., public and private) in an attempt to identify offenders.

Use of Surveillance Cameras – Installation and use of surveillance cameras to deter and prosecute illegal dumping at high priority sites identified within a Permittee's jurisdictional area.

Use of Physical Barriers or Improvements – Installation and use of physical barriers (e.g., fences, walls) or physical improvements (e.g., maintenance) which eliminate or deter illegal dumping at high priority sites identified within a Permittee's jurisdictional area.

CR-6: Improved Trash Bin/Container Management

Area-wide credit that is based on the development and implementation of an outreach and enforcement program to identify private properties with inadequate trash service, implementation of a strategic plan for public area trash containers, and the successful establishment of business improvement districts or equivalent.

Instructions: *Follow the instructions for each control measure. As description of each control measure the can be found below the table.*
Private Trash Service *: Select the level of effort (i.e., Not Implemented or Inplemented) for* ***each*** *tier from the pull down menus (highlighted in pink).*
If the higher tier is implemented, the lower tier must also be implemented.

Public Area Trash Containers *: Select the level of effort (i.e., Not Implemented or Inplemented) from the pull down menus (highlighted in pink).*

Business Improvement District (BID): *This control measures is calculated using the second table.*
1) In Column B, fill in the second table with each BID's name(highlighted in green).
2) In Column C, Fill in the estimated area covered by each BID (highlighed in green)
3)In Columns D-J, fill in the estimated land use percentages applicable to each BID (highlighed in green)

Timing (date of implementation), cost for each tier, and other benefits or synergies are optional, and may can be filled in (highlighted in blue)

Control Measure	Level of Effort	Load Reduction Credit (%)	Timing	Cost	Other Benefits/Synergies
Ensuring adequate private trash service and enclosures by development and approval of:					
Tier 1 - an ordinance for appropriate trash service for private properties	Not Implemented	0.0			
Tier 2 - an ordinance AND identification and enforcement of inadequate trash service for private trash and recycling bins/containers	Not Implemented	0.0			
Implementation of Strategic Plan for Public Area Trash Containers	Not Implemented	0.0			
Successful establishment of each Business Improvement District (BID) that includes trash reduction control measures	Complete Table Below	0.0			
TOTAL REDUCTION CREDIT		**0.0**			

* Load reduction credit for the sucessful establishment of each BID is 50% of the baseline load in each BID

Business Improvement District Name	Area Covered by BID (acres)	% Retail and Wholesale	% K-12 Schools	% Commerical or Industrial	%Urban Parks	% High Density Residential
BID A						
BID B						
BID C						
BID D						
BID E						
BID F						
TOTALS	0	0	0	0	0	0

Description of Control Measures

Ensuring Adequate Private Trash Service – Implementation of a program that identifies businesses or households that have inadequate trash service (i.e., insufficient trash collection or use of bins which are too small); and through municipal code enforcement or other authorities requiring businesses/households to sufficiently remedy the issue will receive a load reduction credit based on the extent of the program. Permittees may choose to coordinate with waste haulers to assist with the identification of subject households/businesses. Implemented programs may receive up to **3 percent load reduction credit if Tier 2 is implemented.**

Implementation of Strategic Plan for Public Area Trash Containers – Implementation of a strategic plan that:

- Identifies whether public area trash containers are sufficiently located in high trash generating areas and are adequately designed to manage trash types that typically are generated from activities occurring at these areas (e.g., containers with larger openings designed to accommodate larger trash items (e.g., pizza boxes) are in locations where people dispose of these items (e.g., near schools or parks).
- Identifies an increased level of inspection and maintenance of public area trash containers is needed at high trash generating sites.
- Includes the installation of specialty trash bins/containers (e.g., bins for cigarette butts, sharps, etc.) in specific locations to eliminate or reduce the prevalence of these items
- Includes the installation of new technologies (e.g., Big Belly Solar Trash Compactors) to reduce trash in stormwater and reduce the cost of adding public area trash

Successful Establishment of Business Improvement Districts with Trash Reduction Control Measures – Provide support toward the successful establishment of Business Improvement Districts (BIDs) or equivalent entity that incorporates sidewalk sweeping, litter pickup and maintenance of public area trash containers at least once per week in retail/wholesale and commercial areas. Area-specific credit will be given for each BID successfully established within a Permittee's jurisdictional area that has specific trash reduction language in the agreement. The successful establishment of each BID that includes trash reduction control measures will receive a load reduction credit of 50% of its

CR-7: Single-Use Food and Beverage Ware Policy

Area-wide credit based on the adoption of a local or countywide policy, or implementation of statewide action that reduces the distribution of single-use food and beverage ware. Prohibitions can be implemented at multiple tiers. Control measures must include an active enforcement program.

Instructions:

1) In Column C, select the level of effort (e.g., not implemented, mandatory fee or mandatory discount) for both tiers from the pull down menus (highlighted in pink).
A description of each tier can be found below the table.
If the higher tier is implemented, the lower tier must also be implemented.
If both tiers are implemented, they must be the same (i.e., both mandatory fees or both mandatory discounts).

2) Timing (date of implementation), cost for each tier, and other benefits or synergies are optional, and may be filled in (highlighted in blue).

Control Measure	Level of Effort	Load Reduction Credit (%)	Timing	Cost	Other Benefits/Synergies
Ordinance (or Equivalent) that requires food service vendors to provide a 10% discount for "Bring Your Own" or 10% fee on single use:					
Tier 1a – Beverage Ware **Only**	Not Implemented	0.0			
Tier 1b – Food **AND** Beverage Ware	Not Implemented	0.0			
TOTAL REDUCTION CREDIT		**0.0**			

Description of Control Measures

Tier 1a – Require all food service vendors to: 1) provide consumers a discount for "bringing their own" reusable beverage ware, or 2) charge consumers a fee for using single-use beverage containers – Adoption of a local ordinance or implementation of a statewide or countywide action that requires ALL food service establishments within their jurisdictional boundaries that sell take-out beverages to provide a discount to consumers on the sale of beverages when a re-usable container is used, shall receive a trash load reduction credit of 8 percent. Adoption of a local ordinance or implementation of a statewide or countywide action that requires ALL food service establishments within their jurisdictional boundaries that serve take-out beverages to charge the consumer a fee for each take-out beverage container used, shall receive a trash load reduction credit of 12 percent.

Tier 1b – Mandatory Fee for single-use disposable food and/or beverage containers – Adoption of a local ordinance or implementation of a statewide or countywide action that requires ALL food service establishments within their jurisdictional boundaries that sell take-out beverages and/or food to provide a discount to consumers on the sale of food and beverages when a re-usable container is used, shall receive a trash load reduction credit of 20 percent. Adoption of a local ordinance or implementation of a statewide or countywide action that requires ALL food service establishments within their jurisdictional boundaries that serve take-out food and/or beverages to charge the consumer a fee for each take-out food or beverage container used, shall receive a trash load reduction credit of 24 percent.

To receive the trash load reduction credits, Permittees must implement in parallel with the ordinance: 1) public education/outreach actions focused educating consumers and food service vendors on the implementation the ordinance; and 2) an active enforcement program that includes inspections of food service vendors to ensure compliance. Additionally, if a control measure does not fit within one of the tiers described above, a Permittee may propose a credit commensurate with the nature and intent of the similar action.

QF-1: Enhanced On-Land Trash Cleanups

Area-wide quantification formula that is based on the total volume of trash removed by volunteers and/or municipal and flood control agency staff conducting single-day and on-going, **NEW or ENHANCED** on-land cleanups. ONLY trash that had the potential to be discharged into the stormwater conveance system may be counted towards load reduction goals.

Instructions: *The table is divided by "Permittee-led" and Volunteer-led". Examples of each type of on-land cleanup effort are decribed below the table. The following instructions apply to both Permittee-led and Volunteer-led cleanups.*

1) Under "Control Measure" in Column A, fill in a description of each on-land cleanup program in your jurisdiction (highlighted in green).
2) For each cleanup program described, fill in the gallons of trash removed from that program under "Load Reduction" (Column B, highlighted in green).
3) Timing (date of implementation) in Column C, cost (Column D), and other benefits or synergies (Column E) are optional, and may be filled in (highlighted in blue).

On-land cleanup activities are differentiated from creek/channel/shoreline cleanup activities, which are accounted for under QF-1.

Control Measure	Load Reduction (gallons)	Timing	Cost ($)	Other Benefits/Synergies
Name of Permittee-led Enhanced On-land Cleanups				
Cleanup Program A				
Cleanup Program B				
Cleanup Program C				
Cleanup Program D				
Cleanup Program E				
Cleanup Program F				
Name of Enhanced Volunteer-led On-land Cleanups				
Cleanup Program A				
Cleanup Program B				
Cleanup Program C				
Cleanup Program D				
Cleanup Program E				
Cleanup Program F				
TOTAL REDUCTION	0		0	

Description of Control Measures

Permittee-led On-land Cleanups – New or enhanced on-land cleanup activities led by Permittees on publicly-owned property that are conducted as part of the following
- Routine or Regularly Scheduled Litter Pickup and Removal;
- Removal of Homeless Encampments;
- Illegal Dump Site Responses and Abatement;
- Interagency Cleanup Coordination and Cleanups
- Litter Pickup Event Coordination and Cleanups

Volunteer-led On-land Cleanups – New or enhanced on-land cleanup activities led by volunteer organizations but coordinated with Permittees, including the following:
- Single-day Cleanup Events
- Keep America Beautiful
- Adopt-a-Spot, Adopt-a-Highway, Adopt-a-Trail and Other "Adoption" Programs
- Other Organized Cleanup Events
- Routine Cleanups of Selected On-land Hot Spots

QF-2: Enhanced Street Sweeping

Area-specific quantification formula that is based on the effectiveness of street sweeping during dry and wet weather, which is affected by parking enforcement, street sweeping frequency, and storm frequency.

Instructions *: There are two ways to calculate the increase in load reduced via enhanced street sweeping. The first is via GIS Analysis, and the second is via the the calculator. Please select ONLY ONE method.*

If the load reduced via Enhanced Future Street Sweeping has been calculated using GIS, enter this volume in the green highlighted box below.

To use the calculator, follow the instructions below. ***ALL*** *columns MUST be filled in for a each route.*
1) Fill in a description of each route/area to received enhanced street sweeping (Column A)
2) Fill in the percentage of each land use representing each route/area (Columns B-H). The land use percentages should add up to 100%.
3) Fill in the number or curb miles swept for each route/area (Column I)
4) Next select the ***current*** *street sweeping frequency (Column K) and parking enforcement (or equivalent) (Column M) from the pull-down menus (highlighted in pink) for both the dry and wet seasons. If the street sweeping program did not vary by season, the inputs should be identical.*
5) Then select the the ***enhanced*** *street sweeping frequency (Column O) and parking enforcement (or equivalent) (Column Q) from the pull-down menus (highlighted in pink) for both the dry and wet seasons. If the street sweeping program will not vary by season, the inputs should be identical.*

Parking enforcement should be selected if the sweeper can reach the curb because of any of the following reasons:
1. No Parking" signs are posted
2. Parking restrictions are in place and/or citations are issued during sweeping times
3. Sweeping occurs prior to cars arriving
4. Cars don't park on the street

QF-3: Partial-Capture Treatment Devices

Area-specific quantification formula that is based on the volume of trash removed by each partial-capture devices (curb inlet scre
dependent on the demonstrated effectiveness. The formula for litter booms is area-wide while the other two are area-specific.

Instructions: *GENERAL load reduction estimates for partial capture devices can be quantified in this calculator. This calculator is
and curtains, and pump station enhancements. In the green highlighted cells below, enter the name/location of the device(s), the*

1) For all three device types, enter the name or location of the devices to be installed in Column A
2) For all three device types, enter the number of the devices to be installed in Column B

Curb inlet screens: *These instructions only pertain to curb inlet screens, The load reduction for curb inlet screens assumes no enhc
inlet screen installation is planned, then GIS may be necessary to more accurately estimate load reductions.*
3) For each set of devices, enter the approximate percentages of different land uses treated in Columns D through J.

Litter booms and curtains:
3) For each device (or set of devices), enter the estimated area treated in Column C
4) Enter the estimated or empirically derived volume of trash captured via the implementation of the enhancement in Column K.

Pump station enhancements: *If an enhancement to a pump station with an existing trash rack is planned, the estimated/measu
into account in the baseline load calculation).*
3) For each device (or set of devices), enter the estimated area treated in Column C
4) Enter the estimated or empirically derived volume of trash captured via the implementation of the enhancement in Column K.

If you would like to insert additional rows, ensure that the volumes from the new rows are added into the total "Estimated Load F

Name/Location of Device	Number of Devices	Effective Loading Area Treated (acres)	% Retail and Wholesale	% K-12 Schools	% Commerical or Industrial
Curb Inlet Screens					
Curb Inlet Screens A		0.0			
Curb Inlet Screens B		0.0			
Curb Inlet Screens C		0.0			
Curb Inlet Screens D		0.0			
Curb Inlet Screens E		0.0			
Curb Inlet Screens F		0.0			
Curb Inlet Screens G		0.0			
Litter Booms and Curtains					
Litter Boom/Curtain A					
Litter Boom/Curtain B					
Litter Boom/Curtain C					
Litter Boom/Curtain D					
Litter Boom/Curtain E					
Pump Station Trash Rack Enhancements					
Enhancement A					
Enhancement B					
Enhancement C					
Enhancement D					
Enhancement E					
TOTALS	**0**	**0.0**			

Description of Control Measures

Curb Inlet Screens (Area-specific) - devices that were installed prior to or after the MRP effective date that block trash from enter
up via street sweeping, and are not associated with other full-capture devices

Litter Booms/Curtains (Area-specific) – devices that were installed prior to or after the MRP effective date that block and retain t

Enhancement to Stormwater Pump Station Track Racks (Area-wide) – enhancements to existing pump station structures that wi
removal. Reductions due to this control measure are taken off the load after the area-specific partial capture devices reduction is

QF-4: Enhanced Storm Drain Inlet Maintenance

Area-specific quantification formula that is based on the load reduced due to enhancing the frequency of storm drain inlet maintenance, which is dependent on the number of inlets n the anticipated increase in load reduced due to that particular enhanced frequency.

Instructions:

1) For each set of storm drain inlets to planned for enhanced maintenance, fill in a general location of the inlets in Column A
2) In Column B, fill in the number of inlets in each set (highlighted in green)
3) In Columns D through J, fill in the approximate percentages of different land uses treated for each set of inlets
4) Choose the planed enhanced cleaning frequency for each set of inlets from the pull-down menu in Column K

The load reduction for enhanced (more frequent) storm drain maintenance assumes that NO enhanced street sweeping will occur in the areas where enhanced maintenance is planned. where enhanced maintenance is planned, then GIS may be necessary to more accurately estimate load reductions.

General Location Inlets	Number of Inlets	Applicable Drainage Area (acres)	Land Uses Treated					
			% Retail and Wholesale	% K-12 Schools	% Commerical or Industrial	%Urban Parks	% High Density Residential	% Low Density Residential
Sets of Inlets A		0.0						
Set of Inlets B		0.0						
Set of Inlets C		0.0						
Set of Inlets D		0.0						

QF-5: Full-Capture Treatment Devices

Area-specific quantification formula that is based on the volume of trash removed from full-capture devices, which is dependent on the area treated by the device.

Instructions: *There are two ways to calculate the increase in load reduced via full-capture treatment devices. The first is via GIS Analysis, and the second is via the the calculator. Please select ONLY ONE method.*
If the load reduced via Full-Capture Devices has been calculated using GIS, enter this volume in the green highlighted box below.

Small Devices:
1) Use the pull down menu in column B to select your device type.
2) In Column C, enter the number of storm drain inlet devices (e.g., connector pipe screens) installed or planned for installation. You may enter these as individual devices or sets of devices.
3) In columns F through L, enter the approximate percentages of different land uses within the drainage/treatment areas for each device or set of devices.
4) The estimated load reduced via installation of the full capture device or set of devices is calculated in column M.

Large Devices:
1) Use the pull down menu in column B to select your device type.
2) In Column C, enter the number of devices installed or planned for installation. You may enter these as individual devices or sets of devices.
3) In Column D, enter the estimated or calcuated area that is or will be treated by the device.
3) In columns F through L, enter the approximate percentages of different land uses within the drainage/treatment areas for each device or set of devices.
4) The estimated load reduced via installation of the full capture device or set of devices is calculated in column M.

Via GIS Analysis : Load Reduced via Full-Capture Devices **Gallons**

QF-6: Creek/Channel/Shoreline Cleanups

Area-wide quantification formula that is based on the total volume of trash removed by volunteers and/or municipal and flood control agency staff conducting new or enhanced single-day or on-going creek or shorline cleanups.

Instructions: *The table is divided by "Permittee-led" and Volunteer-led". Examples of each type of creek/channel/shoreline cleanup effort are decribed below the table. The following*
1) Under "Control Measure" in Column A, fill in a description of each creek/shoreline cleanup program in your jurisdiction (highlighted in green).
2) For each cleanup program described, fill in the gallons of trash removed from that program under "Load Reduction" (Column B, highlighted in green).
3) Timing (date of implementation) in Column C, cost (Column D), and other benefits or synergies (Column E) are optional, and may be filled in (highlighted in blue).

Creek/Channel/Shoreline cleanup activities are differentiated from on-land cleanup activities, which are accounted for under QF-1.

Control Measure	Load Reduction (gallons)	Timing	Cost ($)	Other Benefits/Synergies
Name of Permittee-led Creek Cleanups				
Trash Hot Spot- AM_SB-PB #1	434	Annual	744.78	Compliance with MRP
Trash Hot Spot- ALP@Livermore Bridge #2)	260	Annual	744.78	Compliance with MRP
Trash Hot Spot-AM-H-MP#3)	43	Annual	744.78	Compliance with MRP
Trash Hot Spot- ALP-NTP#4	260	Annual	744.78	Compliance with MRP
Name of Volunteer-led Creek Cleanups				
Granada Native Gardens- Workday	208	Annual		Community Participation & Engagement
Cleanup Program B				
Cleanup Program C				
Cleanup Program D				
Cleanup Program E				
Cleanup Program F				
TOTAL REDUCTION	**1,205**		**2979.12**	

Description of Control Measures

MRP-Required– All trash loads reduced via hot spot cleanups required by MRP Provision C.10.b. during the year of interest may be tracked and used by Permittees to assess progress towards trash load reduction goals. Consistent with established tracking methods, Permittees will quantify the volume of trash removed from each trash hot spot cleanup during each annual hot spot cleanup event and identify the dominant types of trash (e.g., glass, plastics, paper) removed and their sources to the extent possible. In some instances, volunteers may assist agencies with these cleanups. This information will be reported in Permittee Annual Reports submitted to the Water Board each year by September 15.

Non-MRP-Required – Similar to MRP-required hot spot cleanups, all trash loads reduced via new or enhanced creek/channel/shoreline cleanups during the year of interest that are outside of those required by the MRP may be tracked and used by Permittees to assess progress towards trash load reduction goals. These cleanups include but are not limited to

Permittee & Volunteer Collaborative Activities

Single-day Efforts: National River Cleanup Day (third Saturday in May)
Coastal Cleanup Day (third Saturday in September)
Other Organized Single-day Events

On-going Efforts: Adopt-a-Creek and Other "Adoption" Programs
Other Organized Cleanup Efforts
- Individuals or Organized Groups
- Creek/Watershed Group
- Non-governmental Organizations (e.g., Save the Bay, etc.)

Permittee-led Cleanup Activities

On-going Efforts: Removal of Homeless Encampments
Routine or Regularly Scheduled Creek Maintenance
Illegal Dump Site Correction
Measure-funded Programs
Other On-going Cleanup Efforts

Land Use

Rural Residential
Low Density Residential
High Density Residential
Retail and Wholesale
Commerical/Industrial
K-12 Schools
Urban Parks

Generation Rates
GenRates - Base SS
Gen Rates - Base SS & SDI
Gen Rates - Base SS & SDI & PS (Baseline Rates)
Baseline - Enhanced Existing SS
Baseline - Enhanced Existing SS - Credits - On-land Cleanup
Base-Enh Ex SS - Credits- Onland - Future SS
Base-Enh Ex SS - Credits- Onland - Future SS - partial - SDIM - full
Base-Enh Ex SS - Credits- Onland - Future SS - partial - SDIM - full - creek cleanups

Bags	YN	Camera
Plastic Bags Only	Implemented	at 20% - 49% of hot spots
All Types of Single-Use Bags	Not Implemented	at ≥ 50% of hot spots
Not Implemented		Not Implemented

% Retail and Wholesale	% K-12 Schools	% Commerical or Industrial
29.99	13.14	7.08
21.50	9.42	5.08
20.43	8.95	4.82
20.43	8.95	4.82
20.43	8.95	4.82
13.69	6.00	3.23
13.69	6.00	3.23
10.16	4.45	2.40
9.23	4.04	2.18

Barrier	Discount fee	Season	YesNo
at 20% - 60% of hot spots	Mandatory Discount	Dry	Yes
at 61% - 100% of hot spots	Mandatory Fee	Wet	No
Not Implemented	Not Implemented		

%Urban Parks	% High Density Residential	% Low Density Residential	% Rural Residential
2.14	17.04	1.25	0.17
1.53	12.22	0.90	0.12
1.46	11.61	0.85	0.12
1.46	11.61	0.85	0.12
1.46	11.61	0.85	0.12
0.98	7.78	0.57	0.08
0.98	7.78	0.57	0.08
0.73	5.77	0.42	0.06
0.66	5.24	0.38	0.05

SDI	Frequency	Number
Monthly	Daily	1
Quarterly	Five times per week	1.4
2x/Year	Three times per week	2.3
1x/Year	Twice per week	3.5
	Weekly	7
	Every Other Week	14
	Twice per month	15
	Monthly	30
	Quarterly	91
	No Sweeping	None
		None

Small Device Types

StormTek Inlet Device (Advanced Solutions)

Grate Inlet Skimmer Box (BioClean)

High Capacity Round Grate Inlet Skimmer Box (BioClean)

Modular Connector Pipe Screen (BioClean)

Trash Guard (BioClean)

ECI-1 Debris Dam (BioClean)

Collector Pipe Screen (G2 Construction)

AVY GRATE Trash Catcher (Gentile Family)

Flo Gard or Flo Gard-Plus (Kristar)

Triton Bioflex Drop Inlet Trash Guard (REM, Inc.)

Connector Pipe Screen (United Stormwater)

Connector Pipe Screen (West Coast Storm)

Other

Large Device Types

Continuous Deflective Separator (Contech)

Downstream Defender (Kristar)

FloGard Dual-Vortex Hydrodynamic Separator (Kristar)

Nettech Gross Pollutant Trap - In Line (Kristar)

Nettech Gross Pollutant Trap- End of Line (Kristar)

Inline Netting Trash Trap (Fresh Creek)

End of Pipe Netting Trash Trap (Fresh Creek)

Storm Flo Screen or GSRD (Roscoe Moss)

Other